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A comparative investigation of retention factors in public high school orchestral programs.

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A COMPARATIVE INVESTIGATION OF RETENTION FACTORS IN PUBLIC HIGH SCHOOL ORCHESTRA PROGRAMS

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by

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THESIS ACCEPTANCE

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Abstract

The purpose of this study was to compare recruiting and retention factors between genders and grade levels for high school orchestra students. The investigation utilized a twenty-three statement survey to elicit information from students with regards to motivation factors, psychological factors, and sociological factors affecting recruiting and retention. T-tests and an analysis of variance procedures revealed female students out-numbered male students four to one, and ninth- and tenth-grade students out numbered eleventh- and twelfth-grader students by more than two to one. Responses from all students (N = 183) revealed males indicated stronger gender biases toward orchestra than females, had more confidence in their abilities than females, but do not enjoy learning the music as much as females. Further results indicated younger students demonstrated more gender biases and do not like the timbre of their instrument as well as older students. The study also indicated parents and teachers were influential in a student's decision to continue participating in orchestra. Friends were found to be less influential to younger students, and more influential to older students. Finally, the study demonstrated that high school students practiced their instrument because of intrinsic rather than extrinsic motivators.

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Chapter I

Introduction

Music is a form of human behavior which occurs within a cultural context (Radocy & Boyle, 1988). The enculturation process assists the development of individuals to function in society and to use music as an integral cultural component. Each culture is distinctive in the way it prioritizes music's role in society. In the United States, much of the enculturation process occurs through the public schools. A class that can assist in developing individual cultural components is the instrumental music class.

In many public school systems, instrumental music courses are often elective classes. Often beginning instrumental music classes are not offered until students reach the fourth- or fifth-grade. While students may not elect to participate in formal instrumental music instruction until the intermediate elementary level, they are often introduced to instrumental music by their parents, peers and teachers. Prior to beginning instruction, students may be exposed to many forces that may influence the formation of ideas and attitudes about instruments and instrumental music classes. Among these influences may be a variety of motivational factors, psychological factors, and sociological factors. Understanding the factors which could influence a student's instrument selection and participation in instrumental music classes is vital to the recruitment and retention of instrumental students.

Motivation is one factor affecting retention. Asmus (1994), Deci (1980) and Walker (1981) found that while extrinsic factors did influence student motivation, intrinsic motivators had a more lasting effect. Students who engage in intrinsically motivated behaviors do so because they are interested in that behavior. Therefore, it may be assumed that teachers who cultivate intrinsic motivation in their students are more likely to have students who practice their instrument, experience more rapid success and continue their participation in instrumental music classes longer. Since motivation is a

factor which can often be manipulated by the music teacher, understanding the nature of music learning and how it relates to retention is important (Asmus, 1994).

There appear to be many factors influencing children's attitude formation toward instruments, musical participation and retention in instrumental music courses. Learning to foster a positive self-concept is vital to retaining students in instrumental music classes. Asmus (1994) and Austin (1990) reported self-concept to be a component influencing students' participation in instrumental music. Both Asmus and Austin found that students involved in musical learning tend to have a more positive self-concept. Although it is not certain whether a positive self-concept is a prerequisite or by-product of music instruction, if a student has positive feelings about participation in instrumental music, it is more probable they will continue to participate (Austin 1990).

Instrument timbre has also been indicated as a factor which influences students' attitude formation of instruments and participation in instrumental music (Fortney, Boyle & DeCarbo, 1993; Gordon, 1991; Kelly, 1995). According to Gordon (1991) timbre preference is highly important to determining student success in learning to play an instrument. "If a student likes the sound associated with a particular instrument, it is possible that he or she will be more successful on that instrument than on an instrument which has a sound that he or she does not like" (Gordon 1991, p. 33). Gordon stated that if a student enjoys the sound of an instrument and therefore finds success with that instrument, it may be assumed that the student will continue to participate in instrumental music classes.

Perceived difficulty in learning to play the instrument is also an important attitudinal factor in recruiting and retaining instrumental music students. Delzell and Leppla (1992) found that students did not want to play an instrument that they felt was too difficult. The authors reported that a low preference for stringed instruments may be due to the perceived level of difficulty. Perceived difficulty, timber preference and self-

concept are psychological factors that focus on a student's rate of achievement. If students feel successful, or they can be successful playing an instrument, they will be more likely to pursue instruction on that instrument (Asmus, 1994). While psychological factors that relate to retention of instrumental music students are important to understand, sociological influences are equally important to consider.

Sociological factors are cultural ideas, thoughts and feelings that can influence student choices. Parents have frequently been identified as influences in a student's decision to participate in instrumental music classes (Delano & Royse, 1987; Hurley, 1995; Mountford, 1978; Papinchak, 1992; Zdzinski, 1992). Hurley (1995) discovered that while students did not directly cite parental influence as affecting their decisions to play a stringed instrument, many of the parents played a musical instrument for enjoyment. Delano and Royse (1987) found college students who elected to participate in college bands had "more parental encouragement to continue performance in college than did non-participants" (p. 16).

Peers have also been identified as a sociological factor influencing participation in instrumental music (Byo, 1991; Fortney, Boyle & DeCarbo, 1993; Hurley, 1995; Papinchak, 1992). Many students join instrumental music programs because their peers were joining (Hurley, 1995). Fortney, Boyle and DeCarbo (1993) reported that peers were important factors in the selection of an instrument.

Music teachers are another sociological factor influencing participation (Byo, 1991; Fortney, Boyle & DeCarbo, 1993; Hurley 1995; Papinchak, 1992). While peers may be an initial influence in beginning instrumental music education, it is the responsibility of the music teacher to encourage continued participation. Byo (1991) stated that while many influential factors are beyond the control of educators, the role of the music teacher in shaping the preferences of children is of critical importance. According to Byo, if music teachers instill within students that instrumental music is an

enjoyable, worthwhile activity, participation in instrumental music is more likely to continue.

Various gender biases found by Abeles and Porter (1978); Brandenberg (1991); Delzell and Leppla (1992); Griswold and Chroback (1981); Tarnowski (1993); and Zervoudakes and Tanur (1994) are other frequently reported sociological factors affecting instrumental music participation. Gender biases can be detrimental to music programs because participation in music classes and instrument selection are often based on "characteristics irrelevant to the function of a group of objects" (Abeles & Porter, 1978, p. 65). Fortney, Boyle, and DeCarbo (1993) claimed that males tend to choose "masculine" instruments while females tend to choose "feminine" instruments. When a student chooses an instrument based on its perceived "masculinity" or "femininity" and does not take into account the more important factors of their own strengths, weaknesses or preferences, it is possible that the student could become dissatisfied with their instrument choice and drop out of music.

Gender bias can effect students, parents, peers and music teachers. In studies by Abeles and Porter (1978); Brandenberg (1991); Delzell and Leppla (1992); Griswold and Chroback (1981); Kelly (1995) Tarnowski (1993); and Zervoudakes and Tanur (1994) stringed instruments, except bass, have been classified as either feminine or gender neutral. These studies have also shown that males tend to play instruments traditionally considered masculine while females tend to play instruments that are traditionally considered feminine. The gender designation of stringed instruments as being primarily female possibly accounts for the predominance of females in high school orchestra programs (Abeles & Porter, 1978).

Recruiting and retaining music students are ongoing goals for instrumental music teachers. Identifying and understanding the outside influences on a student's decision to participate is central to recruitment and retention. While there is a considerable amount of

literature addressing the factors influencing instrument selection and instrumental class participation, a relatively small amount of this research specifically isolates and addresses stringed instruments. Also, while there appears to be a predominance of females in high school orchestra programs, there appears to be a lack of male participation at this level. Therefore, the purpose of this study is to compare recruiting and retention factors between genders and grade levels in high school orchestra programs. The following specific questions will be investigated:

1) What factors motivate students to continue to participate in orchestra classes?

2) Do different forms of motivation affect the retention of males and females differently?

3) How do the psychological factors of self-concept, timbre and perceived difficulty of an instrument affect gender participation in orchestra? Do they differ for males and females?

4) How do the sociological factors of parents, peers, music teachers and gender biases of musical instruments affect gender participation in orchestra? Do these factors differ for males and females?

5) How do motivational, psychological and sociological factors affect retention by grade levels 9, 10, 11 and 12.

Chapter II

Related Literature

There are many factors influencing a student's decision to participate or continue to participate in instrumental music. Understanding these factors is vital for the recruitment and retention of instrumental music students. According to Byo understanding these factors "would be helpful to music educators in determining the optimal times and most appropriate techniques for nurturing and shaping students attitudes" (1991, p. 21).

Motivational Factors

Motivation is the representation of a need or desire of an individual and is the energy behind the decision to be involved in different tasks (Asmus 1994). "When motivation is considered in the light of musical achievement, it is the driving force that promotes students to participate in music learning activities and to acquire the knowledge or skills that are the focus of these activities" (Asmus, 1994, p. 6). Since twenty percent of music achievement is motivation, (Asmus, 1994) an instrumental music teacher who can motivate students can increase their achievement, therefore, encouraging students to continue their participation in instrumental music classes.

Motivation can be divided into two categories: extrinsic and intrinsic motivation. Extrinsic motivation is related to elements outside the student while intrinsic motivation comes from inside the student. Extrinsic motivation has been an important part of teacher education and usually includes some type of external reward for a certain behavior. However, recent research has found that intrinsic motivational techniques have a longer lasting effect on learners (Asmus, 1994). When a student engages in a behavior, such as practicing a musical instrument for the sake of practicing, that student is intrinsically motivated. Students who are continually rewarded for learning behaviors become dependent on the reward. Asmus suggested that intrinsic motivation is more desirable

because students will persist in activities whether external motivators are present or not. In order to foster intrinsic motivation skills, Asmus suggested balancing extrinsic motivational techniques with intrinsic motivational techniques to maximize the positive effects of both. He suggested rewards should not be used when 1) they are not necessary, when 2) the task is interesting to the student, 3) to modify behavior, 4) to induce a student to participate or 5) as a reward for creative thinking. Asmus suggested using rewards when complementing student competence, or when memorizing and convergent thinking are involved in the learning process.

While motivation has traditionally been separated into categories of intrinsic and extrinsic, Walker (1981) recognized two different forms of intrinsic motivation. Autarkic motivation is when the motivation arises from some desired object or state in an individual, such as the person who practices for the joy it brings. Walker stated that idiocratic motivation comes from within an individual, but may be directed toward a variety of goals. A person who is motivated toward the concept of success will seek out activities that provide successful feelings and will be further motivated. A person may also be motivated to avoid failure, therefore, avoids unfamiliar activities that seem threatening. Walker's third form of motivation is extrinsic motivation. According to Walker, extrinsic motivation is aroused by a threat or reward and the motivation disappears when the reward or threat disappears. However, Walker also stated that extrinsic motivation can be perceived by the learner as a surrender of internal control. Like Asmus, (1994), Walker found that extrinsic motivators were less desirable than intrinsic motivators (autarkic and idiocratic) because they were not as strong or as long lasting, and disappeared when the goal was attained.

Deci (1980), in his theory of human behavior, stated that behavior is a result of three motivational systems, three personality orientations and three perceived environments. He suggested that people have an innate need for competence and self-

determination. In order to build intrinsic motivation, students should by given the opportunity to make choices and see the consequences of those choices. Deci also agrees that excessive use of extrinsic motivation can have detrimental effects on performance.

Asmus (1985) studied sixth-graders' views on achievement motivation. The subjects were 118 sixth graders from three elementary schools that represented a cross section of socioeconomic levels. The study was based on the Attribution Theory, developed by Weiner from reasons students gave for the causes of success and failure. The Attribution Theory consists of four causal categories: ability, effort, luck and task difficulty. Asmus found that students believed that success in music was due mostly to effort. Students felt if they worked hard, they could be successful, if they did not work hard, they would not be successful.

Asmus (1986), expanded his 1985 study by including students in grades four through twelve. The subjects were 586 students from eight public schools representing a varied socioeconomic background. Again the four causal categories of ability, effort, luck and task difficulty were used. Results indicated that while younger children attributed musical success to the amount of effort a person put forth, older students tended to attribute success in music to innate ability. Asmus further explained that teachers who encouraged effort attributes were more likely to have students who believed they could achieve in music. Likewise, teachers who promoted ability attributes, had students who were less likely to practice unless they felt they had innate music ability.

Psychological Factors

Another aspect of student retention relating to achievement is self-concept (Hurley, 1995; Asmus, 1994). Achievement and self-concept are closely related as success tends to enhance self-concept (Asmus, 1994). Hurley (1995) noted the importance of self-concept in the achievement and retention of music students. When a student feels successful at a task, the student's self-concept is enhanced, therefore, the

student may wish to continue that task. According to Hurley, students who feel successful in instrumental music are more likely to continue in instrumental music classes.

Hurley's (1995) study interviewed students regarding why they chose to continue or discontinue instruction in stringed instrument classes. The subjects were four distinct populations of students (N=21). The first group consisted of fourth-grade first-year students (n=6), the second group consisted of continuing sixth-grade string students entering the middle school (n=6), the third group consisted string students who showed promise but chose to discontinue instruction (n=5), and the forth group consisted of string students who discontinued instruction but were assessed to lack necessary skills to successfully continue string instruction (n=4). The students who decided to continue their string education express several categories of personal meaning for class participation. All students felt they had grown through the experience and several students expressed the satisfaction they felt that comes with success. Several students felt challenged by the activity and perceived themselves as successful. This study asserted that the value students place on tasks is the most influential factor in continuing instruction. Hurley concluded that self-concept was one factor that influences the value of the task for students.

Austin (1990) examined music's self-concept and the degree of participation in music activities. The subjects were 252 fifth- and sixth-grade students from three urban elementary schools and a nearby rural school. The students represented a diverse socioeconomic background. Students were given the Self-Esteem of Musical Ability scale to measure their music self-esteem. The students were then given a questionnaire to gain background information such as gender, grade level, degree of participation in school activities and degree of participation in extracurricular music activities. Austin found that students with higher levels of self-concept tended to participate more frequently in musical

activities in and out of school. It was also indicated that female students possessed significantly higher levels of music self-concept than male students.

Papinchak (1992) found higher levels of self-concept to be a significant predictor affecting middle school string student retention. A questionnaire designed to gather demographic and opinion data was distributed to 192 middle school string students. Papinchak discovered students who continued to participate in string classes, had pride in playing their instrument and had positive feelings about performing on their instrument.

Another important retention factor is a student's timber preference for a musical instrument (Fortney, Boyle & DeCarbo, 1993; Gordon, 1991). According to Gordon (1991) timbre is a significant predictor in how successful a student will be in learning to play an instrument. Gordon conducted a two-year study on timbre preference. One question addressed whether students who chose an instrument which they demonstrated a timbre preference had more initial success than those selecting an instrument which they did not demonstrate a timbre preference. Gordon concluded that students who chose an instrument which they had a timbre preference did have more initial success. As with other achievement related factors, Gordon stated the more successful a student is at a task, the more likely they are to continue with that task.

In a related study, Fortney, Boyle, and DeCarbo (1993) studied 990 sixth-, seventh-, eighth- and ninth-grade beginning and intermediate band students from thirteen middle schools. The schools included in the study reflected considerable ethnic and socieoeconomic diversity. The authors found that while television, music teachers, the cost of the instrument, peers and parents were influence on instrument preference, timbre was reported by 51% of the respondents to be the most influential factor in choosing an instrument.

Webster and Hamilton (1981-82) studied musical preferences of fourth-, fifth- and sixth-grade students (N=107). The study used 16 short excerpts from four musical styles

(classical, rock, folk-country, and jazz). The excerpts were then divided so that two of each of the four excerpts from each musical style contained violin, and two did not. The study found a marked preference for excerpts which did not contain the violin timbre. This preference seemed to be maintained regardless of the musical style. Since previous studies by Fortney, Boyle, and DeCarbo, (1993) and Gordon (1991) found that instrument timbre was so critical to achievement and retention of musical students, it would appear that string instrument teachers need to present stringed instruments in a manner that makes timbre of certain instruments more attractive to prospective students.

In order for a student to want to play an instrument the student needs to feel it is possible to be successful on that instrument. If an instrument is perceived as difficult to learn, students may doubt their ability to be successful and probably not select to learn that particular instrument (Delzell & Leppla, 1992). Delzell and Leppla attempted to understand the reasons for fourth-grade students' (N=526) expressing a preference for certain instruments. The study included a survey asking students to rank-order the instrument (clarinet, saxophone, trumpet, trombone, drums, violin, and cello) they would most like to play. The most frequent reason students gave for wanting to play their first choice instrument was that it was deemed "easy" or "fun to play." Conversely, reasons students gave for their last choice instrument was that is was "too difficult" or "not fun to play." This study showed a strong disfavor for stringed instruments. Delzell and Leppla found that "violin or cello was the last choice of 60.6% of the students" (p. 99). Delzell and Leppla concluded that since students did not want to play instruments they perceived as too difficult, it may be assumed that students did not want to play the cello or violin because they thought it would be too difficult, therefore they would not be successful.

Motivation, self-concept, timbre preference and perceived difficulty of an instrument are all factors that often rely on achievement to influence recruitment and retention of instrumental music students. Once enrolled in instrumental music courses,

continued growth and constant improvement must be realized by the student or they may come to feel the activity is not worthy of the effort expended.

Sociological Factors

Along with motivational and psychological factors, it may be necessary to understand the sociological variables influencing recruitment and retention in instrumental music classes. Hurley (1995) stated that students who express an interest in instruments may be influenced by their cultural background. Cultural influences center around major socializers who may be involved with the student. Socializers, who can be parents, music teachers or peers, influence students through expressed and/or demonstrated behaviors, attitudes and expectations for the student (Hurley, 1995).

Zdzinski (1992) studied the relationship among parental involvement, musical aptitude and musical achievement of instrumental music students. The subjects were 113 randomly selected instrumental music students from four middle schools and ranged from sixth- to eighth-grade. The results showed that while parental involvement is not related to overall musical achievement, a significant relationship did exist between a parent's involvement and the student's musical aptitude. The author also noted that the effect of parental involvement on student achievement decreased as the student got older.

Trollinger (1993) and Zdzinski (1994) found that parental involvement, as related to student learning, may differ by gender. The subjects for the Zdzinski study were 406 band students. Zdzinski measured parental involvement and gender upon musical performance achievement. While Zdzinski found no significant differences among the variable by gender, there were some gender related trends. For the affective outcomes, females had a higher parental involvement relationships, while male parental involvement relationships were higher for achievement. Trollinger (1993) in a review of gender research in music education stated that males in particular had a strong need from parents, peers and teachers in order to develop and express themselves musically.

Hurley (1995) found that while parents are a factor in students beginning instrumental music instruction, the influence is not always direct. Hurley noted that students did not directly consider their parents as influences in beginning string instruction. However, many of the students had parents previously involved in instrumental music. Hurley concluded that while the parents of these students "rarely verbalized that participation in an instrumental class was expected of the student, the students' recognition that parents played instruments for enjoyment led to the perception that instrumental music instruction would be worthy of study" (p. 52).

Allen (1995) also found parents were a factor in the retention rate of string students in their first year of study. Allen concluded that students from homes which had little or no parental influence, dropped out of the string classes at a significantly higher rate than students from one or two parent homes. Allen also discovered that when the parents had a substantial amount of contact with the teacher, students dropped out at a significantly lower rate than when parents and teachers had little or no contact. Contrary to Hurley's (1995) findings, Allen found that parental training in music did not significantly effect the dropout rate of string students.

The studies by Hurley (1995), Delano and Royse (1987), and Mountford (1978) demonstrated the importance of parental support of instrumental music education for students of all ages. In studying the factors that influence college freshmen to participate in university music ensembles, Delano and Royse (1987) and Mountford (1978) found encouragement from parents was an important factor. Delano and Royse surveyed 304 college freshmen who indicated an interest in music but did not participate in instrumental ensembles during their freshmen year, and forty-eight freshmen who were participating in instrumental ensembles. Students were questioned regarding the factors influencing their decision to participate or not participate in ensembles. The authors found that students who chose to participate in music had more encouragement from their parents than those

who did not participate. Papinchak (1992) also found middle school students were more likely to continue participation in string classes when their parents wanted them to continue playing an instrument and when their parents attended their concerts.

Fortney, Boyle, and DeCarbo (1993) discovered that parents were also an important influence in the instrument selection process. Retention is related to achievement, therefore it is important for students to select an instrument that they can be successful with. Having parental support for playing that instrument is important for continued participation. Martignetti (1965) noted that when students dropped out of instrumental music classes because they did not like the instrument, often times their parents did not like the instrument either.

Along with the importance of parental influences, Delano and Royse (1987); Fortney, Boyle and DeCarbo (1993); Hurley (1995); Mountford (1978); and Papinchak (1992) noted peers and music teachers were also influential in recruiting and retaining instrumental music students. Hurley's study found a majority of the students knew someone who had been involved in instrumental music, which predisposed "these students toward instrumental music instruction" (1995, p. 48). Papinchak (1992) found that many students had a best friend who also participated in strings class. Papinchak also noted that students who continued to participate felt their teacher enjoyed teaching strings. Delano and Royse (1987) and Mountford (1978) also recognized that students who participated in instrumental music at the collegiate level were encouraged to do so by their high school music teachers.

Another sociological factor influencing student recruitment and retention in instrumental music classes is gender biases of musical instruments. The effect of gender biases may seem enhanced because they effect not only students but parents, music teachers, peers, and timbre preferences. To understand the effect of gender biases it is important to know the source. Koza (1993) detected evidence of gender issues dating

back to the beginning of public school music education. In reviewing articles in the *Music Supervisor's Journal, (MSJ)* from 1914, Koza found many articles addressing the "missing males" problem. *MSJ* went to great lengths to promote music career opportunities for males and to show how music improved the "nature and character" of males. Koza also described how females were also encouraged to participate in music so they could be better wives and mothers. Music was credited for helping to keep males out of trouble by involving them in neighborhood orchestras. Koza concluded that instead of trying to attract males to music programs for the sake of music, it attempted to prove music was not feminine and then attacked femininity. This attitude could be responsible for a shortage of males in some music programs.

Most of the issues discussed by Koza dealt with vocal music, however, the issue of gender bias seems to have found its way to instrumental music. Abeles and Porter (1978) conducted a series of studies on this issue. One study revealed that parents preferred traditionally feminine instruments such as clarinet, flute and violin for their daughters, and traditionally masculine instruments such as drum, trombone and trumpet for their sons. In a follow-up study music majors and non-music majors were asked to rate the femininity or masculinity of eight pairs of instruments. As in the previous study the flute, clarinet and violin scored as the most feminine instruments, and trumpet, trombone and drums scored most masculine with saxophone and cello in the middle of the scale indicating neutrality. The third study involved measuring gender biases of children in Kindergarten through fifth-grade. This study showed that the gender biases of instruments is not as strong in younger children, and increases as the child ages. The study points out that gender bias of musical instruments can occur at every age level in the society, with parents, college students, and children and that while the gender associations appear to be lessening for girls, boys are confining themselves to traditionally masculine instruments. Since stringed

instruments, except bass, are considered feminine or neutral, this might account for a lack of males in public school orchestras.

Subsequent studies into the gender bias of musical instruments (Brandenberg, 1991; Delzell & Leppla, 1992; Fortney, Boyle & DeCarbo, 1993; Griswold & Chroback, 1981; Kelly, 1995; Tarnowski, 1993; Zervoudakes & Tanur, 1994) have supported Abeles and Porters (1978) findings. Griswold and Chroback (1981) extended the scope of Abeles and Porter (1978) by including more instruments and the choral and instrumental conductor category. The subjects were eighty-nine undergraduate music and non-music majors, 50 were female (25 music majors) and 39 males (15 music majors). The study used a 10 point Likert-type questionnaire based on the words feminine and masculine. The subjects were asked to rate 17 instruments or the category "instrumental" conductor and "choral" conductor as having feminine or masculine attributes. The study confirmed the results reported by Abeles and Porter (1978).

Delzell and Leppla (1992) conducted two studies involving gender associations. The first study surveyed two groups of undergraduate students, Group A consisted of music majors (n=68) enrolled in a music history course, and Group B consisted of nonmusic majors (n=154) enrolled in an introductory music course. Subjects compared 28 pairs of instruments and were asked to rate one of each pair as more masculine. Based on the survey, it was concluded that the degree of gender association is lessening. The second study found that the choices between genders were significantly different, suggesting preference is related to gender, and (as in Abeles & Porter,1978), males were still confining themselves more often to the instruments in the masculine category. Since stringed instruments are traditionally considered feminine instruments, recruiting and retaining males in orchestra classes could be more difficult that recruiting and retaining females.

Tarnowski (1993) researched whether or not these biases could be influenced by music instructors presentation of the instruments. Seventeen students in kindergarten through second-grade were enrolled in a university outreach course. Special classes introduced the subjects to band, orchestra, and folk instruments. Eight undergraduate music majors, 4 female and 4 male, demonstrated the instruments. The repertoire was simple enough that all demonstrators could perform equally well on all instruments. Children saw and heard both male and female performers on each instrument every class session, as well as having-hands on experience with the instruments. Prior to the classes the students were pretested to determine if gender associations were already evident. These scores were then compared to the posttest given at the completion of the classes. On the pretest only 2 instruments were considered gender-neutral, on the posttest all 15 instruments were considered gender-neutral by 70% of the students. It can be inferred from this study, that string teachers can change gender associations by making a concentrated effort to show that instruments have no gender. Byo (1991) agreed that gender bias associations can be influenced by music teachers stating "instrument presentation can be viewed as a means of offsetting some of the biases, prejudices, and stereotypes that children bring to the classroom" (p. 30).

Summary

If a student is successful in instrumental music class, they will be more likely to continue instruction (Asmus 1994). The research presented appears to support that motivation, self-concept, perceived difficulty of an instrument, timbre, parents, peers, music teachers and gender biases are all influences on a student's decision to begin and continue instruction in orchestra. With an apparent lack of males participating in high school orchestras, it is important to understand how the influences on students' retention effect males and females differently. While there is a substantial amount of research on recruitment and retention of band students, there appears to be less research involving

orchestra students. This study will attempt to isolate differences and similarities between male and female attitudes toward orchestra so that a better understanding can be gained regarding the recruitment and retention orchestra students.

Chapter III

Procedure

Subjects

The subjects were high school orchestra students (N=183) in grades nine through twelve in the Omaha, Nebraska Public School System (OPS). High school students were chosen because they have participated in orchestra for at least 3 years. OPS was chosen because 1) it is a good representation of school districts and student populations in the geographic region, 2) it has a large string music program from which to acquire subjects, and 3) it is ethnically and socioeconomically diverse. OPS is the largest district in the state of Nebraska, educating 44,247 students, 60.9% white, 29.7% African American, 6.6% Latino, 2.8% Asian or Native American (School District of Omaha, 1995). Students representing all seven high schools in OPS were invited to participate in the investigation.

Survey Development

The investigation used a survey (see Appendix A) given to all subjects consisting of statements developed by the investigator in cooperation with a panel of experts. The panel of experts consisted of music educators possessing considerable experience working with high school orchestra students. The investigator met with panel members prior to the development of the survey tool to gain a consensus for the criteria to be explored. After the development of the survey, the panel was consulted again to confirm the reliability, validity and procedures of the tool. The panel offered guidance throughout the investigation.

The survey contained three sections. The first section contained two questions which elicited descriptive information regarding the student's grade level and gender. The second section consisted of seventeen questions based on a six-point semantic differential scale. Students circled the number which best represented their level of agreement with the statements concerning practice and continued participation in orchestra. An even-

numbered scale was selected because it required subjects to agree or disagree so that specific traits and attitudes may be isolated. In the third section, consisting of four questions, students were asked to rank, in order of importance, factors influencing their recruitment and retention in orchestra classes.

After the survey was developed, permission to conduct the investigation was sought and obtained. In compliance with the conditions applying to research requests to the School District of Omaha, the researcher: 1) sent a formal letter of application (see Appendix B) and submitted a full proposal to the Research Office of OPS; 2) requested consent from the Institutional Review Board (IRB) from the University of Nebraska at Omaha to conduct the study; 3) requested permission in writing from all building principals (see Appendix D). After obtaining permission a letter of introduction was then sent to all the OPS high school orchestra directors (see Appendix C) describing the investigation and requesting their participation. Correspondence to participating orchestra directors and building principals was via the OPS's Interdepartmental Mailing System. Completed surveys were also returned to the researcher at no cost to the participating instructors via this mailing system.

Pilot Study

Once permission was obtained from OPS and the IRB, a pilot study was conducted to test the survey's validity, reliability, directions, procedures and the survey's clarity and ease of use. The pilot study took place in October 1996, with seventy-four high school orchestra students from the Millard Public School District and the Kearney Public School District. Students in these districts were chosen because of their similar characteristics with orchestra student in OPS. The administration of the pilot study followed the proposed procedures and survey tool of the full investigation. Based on comments, reaction, and results the effectiveness of the survey's administration, readability and validity was evaluated by the researcher and her supervisor. Changes in the survey

included clarifying the directions for sections two and three and adding the word "over" to the bottom of pages one and three of the survey.

Full-Investigation

On November 12, 1996, the participating orchestra directors were sent a cover letter (see Appendix F) thanking them for their assistance and restating the purpose of the study. Included in this mailing were the procedures for the survey's implementation (see Appendix G) to be read by the directors to the students prior to the administration and one survey for each student based on enrollment figures for the beginning of the fall semester. Directors were not required to explain, define or interpret the survey questions or directions.

The full-investigation took one month to complete. Following an initial two-week interval, follow-up reminders (see Appendix H) were sent to all directors who had not returned the materials. After another two-week interval, the investigator contacted by telephone the directors who had not returned the survey to determine it's status.

Data Collection and Analysis

In December 1996, the returned data was transferred by the author to computer scan sheets for analysis. Data analysis was conducted with assistance from the University of Nebraska at Omaha Computer and Data Communications Department. The data from section two of the survey was analyzed using a t-test with an alpha level of $p < .05$. A t-test was chosen to test the differences in responses to the survey between males and females and between lower-classmen (ninth and tenth-graders) and upper-classmen (eleventh- and twelfth-graders) because it tests significance between independent sample means (Madsen & Moore, 1978). An Analysis of Variance (ANOVA) with an alpha level of $p < .05$ was used to analyze the differences between grade levels. The ANOVA was chosen because it tests whether three or more independent samples differ significantly on basis of variance between sample means (Madsen & Moore, 1978). Section three of the

survey was analyzed using the Mann-Whitney U to determine response differences between males and females and lower- and upper-classmen. The Mann-Whitney U was chosen because it is ordinal measurement which tests differences in samples on the basis of central tendency (Madsen & Moore, 1978). The Kruskal-Wallis One-Way Analysis of Variance was used to determine differences in responses between grade levels. The Kruskal-Wallis One-Way Analysis of Variance was used because it tests significant differences among samples on the basis of ranks (Madsen & Moore, 1978). The results determined what factors encouraged students to continue their participation in orchestra, and if the factors for continued participation are different for males and females and grade levels.

Chapter IV

Results

Initial analysis showed a return rate of 100% (N = 7) of the orchestras surveyed participating in the investigation. The total number of analyzed successfully completed individual surveys (N = 183) represents 69.3% of the eligible subjects. Directors indicated that some students did not wish to participate in the study, while some returned surveys were unusable because the subjects did not follow the directions. Table I shows the total number of successfully completed surveys returned by grade level and illustrates an attrition of orchestra students from grades nine to twelve. The table shows the number of ninth-grade students (N = 64) exceeds the number of twelfth-graders (N = 22) by nearly three to one. The largest decrease appears to occur between the tenth- and eleventh-grades.

Table I

Total of Successfully Completed Surveys By Grade (N=183)

Grade	Respondents	Percent
9	64	35.0
10	60	32.8
11	37	20.2
12	22	12.0
All	183	100.0

Table II shows the total number of returned surveys by gender. Examination shows the female participants (N = 148) outnumber the male participants (N = 35) by more than four to one.

Table II

Total Completed Surveys By Gender (N = 183)

Gender	Respondents	Percent
Female	148	80.9
Male	35	19.1

Table III shows the gender break down by grade level. Examination shows the number of participants decreased as students ages increased. For females, the largest decrease occurred between tenth- and eleventh-grade. The largest decrease for males occurred between the eleventh- and twelfth-grade.

Table III

Breakdown of Completed Surveys By Grade and Gender

	Gender	Respondents	Percent
9th Grade	Female	52	28.4
	Male	12	6.6
10th Grade	Female	48	26.2
	Male	12	6.6
11th Grade	Female	29	15.8
	Male	8	4.4
12th Grade	Female	19	10.4
	Male	3	1.6

Table IV illustrates the subjects' responses and percentages to survey questions three through nineteen. For the survey, the responses were assigned numbers, "Strongly Agree" was represented by (1), "Agree" by (2), "Somewhat Agree" by (3), "Somewhat Disagree" by (4), "Disagree" by (5) and "Strongly Disagree" by (6). For tabulation, the responses "Strongly Agree," "Agree," "Somewhat Agree," "Somewhat Disagree," "Disagree," "Strongly Disagree" are represented by "SA," "A," "SWA," "SWD," "D," "SD." "Missing" indicates an error in transferring data from the survey to the scan sheets.

In responding to statement 3, I practice my instrument because it is a class requirement, 55% of all subjects indicated that they "Strongly disagreed" or "Disagreed." Disagreement with this statement indicates requiring a student to practice is not a strong motivator. More female subjects (56%) than male subjects (48%) indicated disagreement with this statement. The highest degree of agreement with this statement came from eleventh-grade students with 13% of the students indicating they "Strongly Agree."

Statement 4, I decided to play an instrument because my friends were going to play an instrument had a very high level of disagreement. Ninety-four of the total subjects indicated their decision to play a string instrument was not influenced by their peers. Females (7%) indicated peers were more important in their decision to participate than males (.5%). Of the four grade levels, peers affected the decision to begin an orchestral instrument with twelfth-grade students (9%) while they were least important to eleventh-grade students (3%).

Preliminary observations indicated most students were encouraged by their orchestra directors to continue participation with all students responding with mean of 2.268 to statement 5, My orchestra teacher encourages me to continue in orchestra. Male students (mean = 1.886) indicated more encouragement from teachers than females (mean = 2.385). Twelfth-graders felt most encouraged with a mean of 1.591 while ninth-graders felt least encouraged with a mean of 2.516.

Most subjects disagreed with statement 6, I participate in orchestra because my parents want me to, with 73% of the subjects claiming they "Somewhat Disagreed," or "Strongly Disagreed." Parents appeared to be less influential to females subjects with 75% "Somewhat Disagreeing", "Disagreeing" or "Strongly Disagreeing." Males indicated that parental influence was slightly more important with only 65% of the males indicating disagreement. Parental influence was least important to eleventh-graders with 84% indicating disagreement with the statement.

In responding to Statement 7, I enjoy practicing, most students did indicate they liked to practice (mean = 2.787). Enjoyment of practice was the most important motivator for student practice habits. The subjects who least liked to practice were males with a mean of 3.057 and ninth-graders with a mean of 3.172. Twelfth-graders liked to practice the most with a mean of 2.136.

While most subjects disagreed with Statement 8, I thought it would be hard to learn how to play a stringed instrument, the mean score of 4.153 indicates many students thought it would be difficult to learn a stringed instrument. Males (mean = 4.200) anticipated learning a stringed instrument to be slightly less difficult than females (mean = 4.142). Tenth- and twelfth-graders anticipated the highest amount of difficulty in learning a stringed instrument with means of 3.983 and 3.955 respectively. Ninth graders (mean = 4.359) anticipated the least amount of difficulty in learning a stringed instrument.

Statement 9, I decided to participate in orchestra because the teacher made it seem easy, had a mean score of 4.628 indicating that this area of teacher influence was not important. The teacher making the instrument seem easy was not an important factor in the subjects' decision to participate in orchestra with 91% of the males and 90% of the females disagreeing with this statement. Of all the subjects, the teacher making the instrument seem easy was least important to twelfth-graders (mean = 4.818) and most important to tenth-graders (mean = 4.500).

Subjects indicated disagreement with statement 10, My parents make me practice, (mean = 5.192) indicating parents are not a strong motivational factor in their practice habits. Both males and females indicated their parents were not influential in their practice habits. However, females (89%) have a higher percentage of disagreement than males (83%) indicating that parents are slightly less influential to females than males. Parents were most influential to ninth-grade subjects who agreed with this statement most frequently (19%).

Statement 11, I like the sound of my instrument, had a high level of agreement demonstrating most students enjoy the sound of their instrument (mean = 1.945). Males (mean score 2.200) liked the sound of the instrument less than females (mean score = 1.885). Tenth-grade subjects least liked the sound of their instrument (mean of 2.083) while twelfth-grade subjects most liked the sound of the instrument (mean of 1.500).

Sixty-six percent of all subjects agreed with statement 12, I plan to continue playing my instrument after high school. Twelfth-graders had the highest level (mean of 2.500) indicating they were most likely continue their participation. Ninth-graders had the lowest level of agreement (mean of 2.984) indicating an uncertainty concerning their post-secondary music participation. Males (74%) had a higher level of agreement than females (63%) indicating they were most likely to continue playing their instrument after high school.

Subjects highly disagreed with statement 13, I feel orchestra is more for girls than boys, with a mean of 5.415 indicating they did not feel orchestra was more for girls. Females disagreed with this statement (mean = 5.568) more strongly than males (mean = 4.771). This may indicate that males demonstrate more gender biases than females. Eleventh- and twelfth-grade subjects indicated fewer gender biases with only one student indicating any level of agreement with the statement. Tenth-grade students demonstrated

the largest amount of gender biases with 13% indicating they thought orchestra is more for girls than boys.

Statement 14, I feel orchestra is more for boys than girls, had the highest level of disagreement than any other statement on the survey (mean = 5.732). Females (mean = 5.804) disagreed more strongly with this statement indicating few thought orchestra was more for males than females. Males (mean = 5.429) indicated a higher level of agreement with this statement indicating they felt more strongly that orchestra was more for males. Ninth-grade subjects, with the highest mean score (5.859), indicated fewer gender biases while eleventh-grade subjects with the lowest mean score (5.595) indicated more gender biases. Statements 13 and 14 illustrate males make more gender associations with orchestra than females.

Most subjects disagreed with Statement 15, I continue to play in orchestra because my friends are in orchestra, indicating peers are not a strong influence in the decision to continue orchestra participation. Eighty-four percent of all subjects indicated disagreement with this statement. Males (mean = 4.686) had a lower mean score, indicating less disagreement with this statement this may demonstrate that peers are a stronger influence for males than for females (mean = 5.142). Tenth-grade subjects were most influenced by peers (mean = 4.833) while eleventh-grade subjects were least influenced by peers (mean = 5.234)

The mean score of 2.650 indicated most subjects agreed with statement 16, I feel successful in orchestra. Both males and females felt successful in orchestra with mean scores of 2.514 and 2.682 respectively. While twelfth-graders felt most successful (mean = 2.318), eleventh-graders felt least successful (mean = 2.811).

Statement 17, My parents attend my orchestra concerts, had a high level of agreement with 85% of the subjects indicating their parents attend some of their concerts. Eighty-six percent of male students indicated their parents attend some of their concerts

while 85% of female student indicated the same. Agreement with this statement is highest for ninth-grade subjects (mean = 1.797), decreased for tenth-grade subjects (mean = 1.917), decreased again for eleventh-grade subjects (mean = 2.135), and decreased again slightly for twelfth-grade subjects (mean = 2.136) indicating that parents attend concerts of younger students more frequently.

There is a general agreement with statement 18, My orchestra director thinks I am successful in orchestra, with 73% of the subjects believing the orchestra director thinks they are successful. Eleventh-grade subjects are least likely to agree with this statement (mean of 2.757) meaning they felt less confident the orchestra director thought they were successful. Twelfth-grade subjects are most likely to agree with this statement (mean of 2.227) indicating they felt the orchestra director thought they were successful.

The mean, 2.061, for all subjects indicated agreement with statement 19, My director is knowledgeable about stringed instruments. However, males had less confidence (mean = 3.086) than females (mean = 2.041). Twelfth-grade subjects (mean = 1.455) felt most confident their teachers were knowledgeable about stringed instrument while eleventh-graders felt least confident their teacher knowledgeable (mean = 2.306).

Table V illustrates the subjects' responses (with percentages) to survey questions twenty through twenty-three. For the survey, the responses were assigned numbers, "Most Important" was represented by (1), "Important" by (2), "Neutral" by (3), "Not Important" by (4), and "Least Important" by (5). For tabulation the responses "Most Important," "Important," "Neutral," "Not Important," "Least Important," are represented by "MI," "I," "N," "NI," "LI." "Missing" indicates an error in transferring data from the survey to the scan sheets.

Statement 20, The reason I decided to play a stringed instrument was, had five responses. The fifth response, I thought I would be good at it, was found to be most

Table IV

Frequency of Responses with (%) to Survey Statements 3-19 (N=183)

Statement: 3. I practice my instrument because it is a class requirement.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	14 (7.7)	8 (4.4)	26 (14.2)	33 (18.0)	41 (22.4)	60 (32.8)	1 (.05)	4.423	1.546
M	3 (8.6)	3(8.6)	5 (14.3)	6 (17.1)	4 (11.4)	13 (37.1)	1 (2.9)	4.294	1.715
F	11 (7.4)	5 (3.4)	21 (14.2)	27 (18.2)	37 (25.0)	47 (31.8)		4.453	1.509
9th	4 (6.3)	6 (9.4)	12 (18.8)	8 (12.5)	13 (20.3)	20 (31.3)	1 (1.6)	4.270	1.609
10th	4 (6.7)	1 (1.7)	7 (11.7)	13 (21.7)	20 (33.3)	15 (25.0)		4.483	1.384
11th	5 (13.5)	1 (2.7)	4 (10.8)	4 (10.8)	6 (16.2)	17 (45.9)		4.514	1.805
12th	1 (4.5)	0 (0.0)	3 (13.6)	8 (36.4)	2 (9.1)	8 (36.4)		4.545	1.371

Statement: 4. I decided to play an instrument because my friends were going to play an instrument.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	6 (3.3)	4 (2.2)	1 (.5)	7 (3.8)	18 (9.8)	147 (80.3)		5.557	1.132
M	0 (0.0)	1 (2.9)	0 (0.0)	1 (2.9)	7 (20.0)	26 (74.3)		5.629	.808
F	6 (4.1)	3 (2.0)	1 (0.7)	6 (4.1)	11 (7.4)	121 (81.8)		5.541	1.197
9th	2 (3.1)	1 (1.6)	0 (0.0)	1 (1.6)	6 (9.4)	54 (84.4)		5.656	1.042
10th	3 (5.0)	1 (1.7)	1 (1.7)	5 (8.3)	5 (8.3)	45 (75.0)		5.383	1.316
11th	0 (0.0)	1 (2.7)	0 (0.0)	1 (2.7)	6 (16.2)	29 (78.4)		5.676	.784
12th	1 (4.5)	1 (4.5)	0 (0.0)	0 (0.0)	1 (4.5)	19 (86.4)		5.545	1.335

Statement: 5. My orchestra teacher encourages me to continue in orchestra.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	94 (51.4)	29 (15.8)	17 (9.3)	16 (8.7)	14 (7.7)	13 (7.1)		2.268	1.651
M	21 (60.0)	5 (14.3)	3 (8.6)	5 (14.3)	0 (0.0)	1 (2.9)		1.886	1.323
F	73 (49.3)	24 (16.2)	14 (9.5)	11 (7.4)	14 (9.5)	12 (8.1)		2.358	1.710
9th	30 (46.9)	8 (12.5)	5 (7.8)	9 (14.1)	8 (12.5)	4 (6.3)		2.516	1.737
10th	30 (50.0)	9 (15.0)	7 (11.7)	6 (10.0)	3 (5.0)	5 (8.3)		2.300	1.660
11th	18 (48.6)	9 (24.3)	4 (10.8)	1 (2.7)	1 (2.7)	4 (10.8)		2.189	1.647
12th	16 (72.7)	3 (13.6)	1 (4.5)	0 (0.0)	2 (9.1)	0 (0.0)		1.591	1.221

Table IV (continued)

Frequency of Responses with (%) to Survey Statements 3-19 (N=183)

Statement: 6. I participate in orchestra because my parents want me to.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	15 (8.2)	11 (6.0)	23 (12.6)	16 (8.7)	28 (15.3)	90 (49.2)		4.645	1.680
M	2 (5.7)	3 (8.6)	7 (20.0)	5 (14.3)	4 (11.4)	14 (40.0)		4.371	1.646
F	13 (8.8)	8 (5.4)	16 (10.8)	11 (7.4)	24 (16.2)	76 (51.4)		4.709	1.687
9th	5 (7.8)	5 (7.8)	8 (12.5)	8 (12.5)	14 (21.9)	24 (37.5)		4.453	1.642
10th	8 (13.3)	4 (6.7)	6 (10.0)	5 (8.3)	7 (11.7)	30 (50.0)		4.483	1.873
11th	0 (0.0)	0 (0.0)	6 (16.2)	0 (0.0)	7 (18.9)	24 (64.9)		5.324	1.107
12th	2 (9.1)	2 (9.1)	3 (13.6)	3 (13.6)	0 (0.0)	12 (54.5)		4.500	1.845

Statement: 7. I enjoy practicing my instrument.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	54 (29.5)	39 (21.3)	31 (16.9)	28 (15.3)	13 (7.1)	18 (9.8)		2.787	1.639
M	6 (17.1)	12 (34.3)	5 (14.3)	4 (11.4)	2 (5.7)	6 (17.1)		3.057	1.731
F	48 (32.4)	27 (18.2)	26 (17.6)	24 (16.2)	11 (7.4)	12 (8.1)		2.723	1.615
9th	13 (20.3)	12 (18.8)	12 (18.8)	14 (21.9)	4 (6.3)	9 (14.1)		3.172	1.658
10th	17 (28.3)	11 (18.3)	10 (16.7)	9 (15.0)	9 (15.0)	4 (6.7)		2.900	1.644
11th	16 (43.2)	11 (29.7)	2 (5.4)	3 (8.1)	0 (0.0)	5 (13.5)		2.324	1.717
12th	8 (36.4)	5 (22.7)	7 (31.8)	2 (9.1)	0 (0.0)	0 (0.0)		2.136	1.037

Statement: 8. I thought it would be hard to learn how to play a stringed instrument.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	17 (9.3)	15 (8.2)	32 (17.5)	33 (18.0)	31 (16.9)	55 (30.1)		4.153	1.644
M	4 (11.4)	1 (2.9)	8 (22.9)	5 (14.3)	5 (14.3)	12 (34.3)		4.200	1.712
F	13 (8.8)	14 (9.5)	24 (16.2)	28 (18.9)	26 (17.6)	43 (29.1)		4.142	1.633
9th	4 (6.3)	5 (7.8)	9 (14.1)	12 (18.8)	14 (21.9)	20 (31.3)		4.359	1.547
10th	8 (13.3)	5 (8.3)	10 (16.7)	11 (18.3)	9 (15.0)	17 (28.3)		3.983	1.742
11th	2 (5.4)	2 (5.4)	8 (21.6)	10 (27.0)	5 (13.5)	10 (27.0)		4.189	1.469
12th	3 (13.6)	3 (13.6)	5 (22.7)	0 (0.0)	3 (13.6)	8 (36.4)		3.955	1.939

Table IV (continued)

Frequency of Responses with (%) to Survey Statements 3-19 (N=183)

Statement: 9. I decided to participate in orchestra because the teacher made it seem easy.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	11 (6.0)	10 (5.5)	14 (7.7)	36 (19.7)	42 (23.0)	70 (38.3)		4.628	1.488
M	1 (2.9)	2 (5.7)	0 (0.0)	6 (17.1)	10 (28.6)	16 (45.7)		5.000	1.283
F	10 (6.8)	8 (5.4)	14 (9.5)	30 (20.3)	32 (21.6)	54 (36.5)		4.514	1.523
9th	2 (3.1)	5 (7.8)	4 (6.3)	16 (25.0)	13 (20.3)	24 (37.5)		4.641	1.407
10th	6 (10.0)	3 (5.0)	4 (6.7)	9 (15.0)	18 (30.0)	20 (33.3)		4.500	1.610
11th	1 (2.7)	1 (2.7)	4 (10.8)	9 (24.3)	9 (24.3)	13 (35.1)		4.703	1.288
12th	2 (9.1)	1 (4.5)	2 (9.1)	2 (9.1)	2 (9.1)	13 (59.1)		4.818	1.736

Statement: 10. My parents make me practice.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	5 (2.7)	3 (1.6)	12 (6.6)	21 (11.5)	32 (17.5)	109 (59.6)	1 (0.5)	5.192	1.240
M	0 (0.0)	2 (5.7)	4 (11.4)	3 (8.6)	6 (17.1)	20 (57.1)		5.086	1.292
F	5 (3.4)	1 (0.7)	8 (5.4)	18 (12.2)	26 (17.6)	89 (60.1)	1 (0.7)	5.218	1.230
9th	3 (4.7)	1 (1.6)	8 (12.5)	7 (10.9)	11 (17.2)	34 (53.1)		4.938	1.435
10th	1 (1.7)	2 (3.3)	3 (5.0)	4 (6.7)	10 (16.7)	40 (66.7)		5.333	1.188
11th	1 (2.7)	0 (0.0)	0 (0.0)	6 (16.2)	7 (18.9)	22 (59.5)	1 (2.7)	5.333	1.069
12th	0 (0.0)	0 (0.0)	1 (4.5)	4 (18.2)	4 (18.2)	13 (59.1)		5.318	.945

Statement: 11. I like the sound of my instrument.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	99 (54.1)	35 (19.1)	24 (13.1)	14 (7.7)	7 (3.8)	4 (2.2)		1.945	1.295
M	17 (48.6)	5 (14.3)	7 (20.0)	3 (8.6)	1 (2.9)	2 (5.7)		2.200	1.491
F	82 (55.4)	30 (20.3)	17 (11.5)	11 (7.4)	6 (4.1)	2 (1.4)		1.885	1.243
9th	31 (48.4)	16 (25.0)	8 (12.5)	4 (6.3)	2 (3.1)	3 (4.7)		2.047	1.385
10th	29 (48.3)	11 (18.3)	9 (15.0)	8 (13.3)	3 (5.0)	0 (0.0)		2.083	1.279
11th	24 (64.9)	5 (13.5)	3 (8.1)	2 (5.4)	2 (5.4)	1 (2.7)		1.811	1.371
12th	15 (68.2)	3 (13.6)	4 (18.2)	0 (0.0)	0 (0.0)	0 (0.0)		1.500	.802

Table IV (continued)

Frequency of Responses with (%) to Survey Statements 3-19 (N=183)

Statement: 12. I plan to continue playing my instrument after high school.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	75 (41.0)	21 (11.5)	24 (13.1)	20 (10.9)	13 (7.1)	30 (16.4)		2.809	1.899
M	15 (42.9)	6 (17.1)	5 (14.3)	1 (2.9)	1 (2.9)	7 (20.0)		2.657	1.955
F	60 (40.5)	15 (10.1)	19 (12.8)	19 (12.8)	12 (8.1)	23 (15.5)		2.845	1.891
9th	26 (40.6)	8 (12.5)	6 (9.4)	3 (4.7)	7 (10.9)	14 (21.9)		2.984	2.066
10th	22 (36.7)	7 (11.7)	8 (13.3)	9 (15.0)	5 (8.3)	9 (15.0)		2.917	1.862
11th	17 (45.9)	4 (10.8)	5 (13.5)	6 (16.2)	1 (2.7)	4 (10.8)		2.514	1.742
12th	10 (45.5)	2 (9.1)	5 (22.7)	2 (9.1)	0 (0.0)	3 (13.6)		2.500	1.766

Statement: 13. I feel orchestra is more for girls than boys.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	8 (4.4)	2 (1.1)	6 (3.3)	9 (4.9)	23 (12.6)	135 (73.8)		5.415	1.246
M	5 (14.3)	0 (0.0)	3 (8.6)	2 (5.7)	5 (14.3)	20 (57.1)		4.771	1.816
F	3 (2.0)	2 (1.4)	3 (2.0)	7 (4.7)	18 (12.2)	115 (77.7)		5.568	1.018
9th	5 (7.8)	1 (1.6)	1 (1.6)	3 (4.7)	7 (10.9)	47 (73.4)		5.297	1.477
10th	3 (5.0)	1 (1.7)	4 (6.7)	2 (3.3)	8 (13.3)	42 (70.0)		5.283	1.379
11th	0 (0.0)	0 (0.0)	1 (2.7)	3 (8.1)	6 (16.2)	27 (73.0)		5.595	.762
12th	0 (0.0)	0 (0.0)	0 (0.0)	1 (4.5)	2 (9.1)	19 (86.4)		5.818	.501

Statement: 14. I feel orchestra is more for boys than girls.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	0 (0.0)	2 (1.1)	2 (1.1)	8 (4.4)	19 (10.4)	152 (83.1)		5.732	.695
M	0 (0.0)	1 (2.9)	1 (2.9)	4 (11.4)	5 (14.3)	24 (68.6)		5.429	1.008
F	0 (0.0)	1 (0.7)	1 (0.7)	4 (2.7)	14 (9.5)	128 (86.5)		5.804	.579
9th	0 (0.0)	0 (0.0)	0 (0.0)	2 (3.1)	5 (7.8)	57 (89.1)		5.859	.432
10th	0 (0.0)	1 (1.6)	0 (0.0)	4 (6.7)	7 (11.7)	48 (80.0)		5.683	.748
11th	0 (0.0)	0 (0.0)	2 (5.4)	2 (5.4)	5 (13.5)	28 (75.7)		5.595	.832
12th	0 (0.0)	1 (4.5)	0 (0.0)	0 (0.0)	2 (9.1)	19 (86.4)		5.727	.883

Table IV (continued)

Frequency of Responses with (%) to Survey Statements 3-19 (N=183)

Statement: 15. I continue to play in orchestra because my friends are in orchestra.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	8 (4.4)	6 (3.3)	15 (8.2)	19 (10.4)	26 (14.2)	109 (59.6)		5.055	1.425
M	2 (5.7)	1 (2.9)	6 (17.1)	5 (14.3)	4 (11.4)	17 (48.6)		4.686	1.568
F	6 (4.1)	5 (3.4)	9 (6.1)	14 (9.5)	22 (14.9)	92 (62.2)		5.142	1.380
9th	2 (3.1)	3 (4.7)	5 (7.8)	6 (9.4)	7 (10.9)	41 (64.1)		5.125	1.409
10th	4 (6.7)	1 (1.7)	8 (13.3)	8 (13.3)	6 (10.0)	33 (55.0)		4.833	1.564
11th	1 (2.7)	1 (2.7)	1 (2.7)	4 (10.8)	8 (21.6)	22 (59.5)		5.234	1.211
12th	1 (4.5)	1 (4.5)	1 (4.5)	1 (4.5)	5 (22.7)	13 (59.1)		5.136	1.424

Statement: 16. I feel successful in orchestra.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	53 (29.0)	43 (23.5)	42 (23.0)	18 (9.8)	14 (7.7)	13 (7.1)		2.650	1.526
M	11 (31.4)	11 (31.4)	6 (17.1)	2 (5.7)	1 (2.9)	4 (11.4)		2.514	1.616
F	42 (28.4)	32 (21.6)	36 (24.3)	16 (10.8)	13 (8.8)	9 (6.1)		2.682	1.508
9th	19 (29.7)	12 (18.8)	14 (21.9)	8 (12.5)	5 (7.8)	6 (9.4)		2.781	1.628
10th	19 (31.7)	15 (25.0)	13 (21.7)	5 (8.3)	4 (6.7)	4 (6.7)		2.533	1.512
11th	8 (21.6)	10 (27.0)	9 (24.3)	4 (10.8)	3 (8.1)	3 (8.1)		2.811	1.525
12th	7 (31.8)	6 (27.3)	6 (27.3)	1 (4.5)	2 (9.1)	0 (0.0)		2.318	1.249

Statement: 17. My parents attend my orchestra concerts.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	118 (64.5)	16 (8.7)	21 (11.5)	11 (6.0)	3 (1.6)	14 (7.7)		1.945	1.543
M	24 (68.6)	3 (8.6)	3 (8.6)	2 (5.7)	0 (0.0)	3 (8.6)		1.857	1.556
F	94 (63.5)	13 (8.8)	18 (12.2)	9 (6.1)	3 (2.0)	11(7.4)		1.966	1.545
9th	45 (70.3)	4 (6.3)	7 (10.9)	3 (4.7)	1 (1.6)	4 (6.3)		1.797	1.460
10th	39 (65.0)	5 (8.3)	7 (11.7)	4 (6.7)	1 (1.7)	4 (6.7)		1.917	1.510
11th	21 (56.8)	4 (10.8)	5 (13.5)	3 (8.1)	1 (2.7)	3 (8.1)		2.135	1.619
12th	13 (59.1)	3 (13.6)	2 (9.1)	1 (4.5)	0 (0.0)	3 (13.6)		2.136	1.781

Table IV (continued)

Frequency of Responses with (%) to Survey Statements 3-19 (N=183)

Statement: 18. My orchestra director thinks I am successful in orchestra.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	54 (29.5)	34 (18.6)	46 (25.1)	28 (15.3)	11 (6.0)	10 (5.5)		2.661	1.466
M	17 (48.6)	5 (14.3)	8 (22.9)	2 (5.7)	1 (2.9)	2 (5.7)		2.171	1.465
F	37 (25.0)	29 (19.6)	38 (25.7)	26 (17.6)	10 (6.8)	8 (5.4)		2.777	1.447
9th	20 (31.3)	10 (15.6)	13 (20.3)	14 (21.9)	3 (4.7)	4 (6.3)		2.719	1.527
10th	18 (30.0)	11 (18.3)	16 (26.7)	5 (8.3)	6 (10.0)	4 (6.7)		2.700	1.555
11th	8 (21.6)	7 (18.9)	12 (32.4)	7 (18.9)	2 (5.4)	1 (2.7)		2.757	1.300
12th	8 (36.4)	6 (27.3)	5 (22.7)	2 (9.1)	0 (0.0)	1 (4.5)		2.227	1.307

Statement: 19. My director is knowledgeable about stringed instruments.

	1 SA	2 A	3 SWA	4 SWD	5 D	6 SD	Missing	Mean	Std D
All	92 (50.3)	36 (19.7)	23 (12.6)	17 (9.3)	6 (3.3)	7 (3.8)	2 (1.1)	2.061	1.391
M	15 (42.9)	9 (25.7)	6 (17.1)	1 (2.9)	0 (0.0)	3 (8.6)	1 (2.9)	3.086	1.197
F	77 (52.0)	27 (18.2)	17 (11.5)	16 (10.8)	6 (4.1)	4 (2.7)	1 (0.7)	2.041	1.374
9th	37 (57.8)	9 (14.1)	7 (10.9)	7 (10.9)	1 (1.6)	3 (4.7)		1.984	1.431
10th	28 (46.7)	14 (23.3)	3 (5.0)	7 (11.7)	4 (6.7)	3 (5.0)	1 (1.7)	2.220	1.554
11th	13 (35.1)	7 (18.9)	11 (29.7)	3 (8.9)	1 (2.7)	1 (2.7)	1 (2.7)	2.306	1.283
12th	14 (63.6)	6 (27.3)	2 (9.1)	0 (0.0)	0 (0.0)	0 (0.0)		1.455	.671

influential overall (mean = 1.967). This indicated a certain level of self-confidence was necessary for students to make the decision to participate. This response was most important for males (mean = 1.771) who recorded the lowest mean score and was slightly less important for females (mean = 2.014). While the mean scores varied little between the four grade levels, ninth- (mean = 1.906) and tenth-grade (mean = 1.950) students indicated this to be the "Most Important" response, while eleventh- (mean = 2.027) and twelfth-grade (mean = 2.091) students indicated this response to be "Important."

Overall, subjects agreed that liking the sound of the instrument was important in their decision to begin participation in orchestra. The fourth response, I liked the sound of the instrument, scored a mean of 2.311. Eleventh- (mean = 1.811) and twelfth-grade students (mean = 1.773) found the sound of the instrument to be "Most Important" in their decision to begin a stringed instrument. Both ninth- (mean = 2.406) and tenth-grade (mean = 2.717) subjects thought the instrument sound was influential toward their decision to begin an instrument, yet it was less influential to tenth-graders. Males (mean = 2.429) considered the sound of the instrument to be slightly less important than females (mean = 2.284).

Next in order of importance to statement 20 was response number one, my parents encouraged me to, (mean = 3.060). This ranking indicated parents were somewhat important to the decision participate in orchestra but less important than students' intrinsic motivators. Males (mean = 3.086) and females (mean = 3.054) indicated they held similar neutral views regarding the significance of parental influence. Tenth- (mean = 3.133) and eleventh-grade (mean = 3.189) subjects also indicated similar neutral opinions. Twelfth-grade subjects (mean = 3.364), while still indicating neutrality about parental influence, recorded this response as slightly less important than the other grade levels. Ninth-grade subjects (mean = 2.813) were the only group which considered parents to be "Important."

I like the teacher, response number three was considered "Neutral" by both

genders and all grade levels, however, the higher mean score (3.574) indicated teachers were considered less influential than parents in beginning string education. Males (mean = 3.771) considered teacher influence to be slightly less important than females (mean = 3.527). Scores, while similar for all grades, indicated that teacher influence in beginning an instrument was more important for twelfth-graders (mean = 3.500) and decreased in importance for younger students (eleventh-grade mean = 3.514; tenth-grade mean = 3.600; ninth-grade mean = 3.609).

Response number two, my friends were going to play an instrument, was considered the least important of the five responses as an influence on subjects' decisions to begin an orchestral instrument (mean = 4.044). Male responses (mean = 3.943) fell within the "Neutral" category indicating they felt friends to be slightly more influential. Females (mean = 4.068) considered this response "Not Important." Tenth-graders considered friends more influential than any other grade level (mean = 3.600). Friends were less influential for ninth- (4.156) eleventh- (mean = 4.459) and twelfth-grade subjects (mean = 4.227) with eleventh-graders indicating they were less influential than the other grades.

The responses to Statement 21, I have continued to participate in orchestra because, include: I play my instrument well, I like the teacher, I enjoy the music we play, I like being part of the group and I like playing my instrument. Students indicated I like playing my instrument as the greatest influence in continuing in orchestra (mean = 1.727). Males (mean = 2.057) while still considering this response the most important of the five, indicated it to be less important than females (mean = 1.649). Eleventh-grade students (mean = 1.459) found they liked playing their instrument to be a more important influence in their decision to participate in orchestra than the other grade levels. Twelfth- and tenth-graders (mean scores 1.682 and 1.733 respectively) found liking their instrument to be

slightly less important than eleventh-graders. Ninth-graders (mean = 1.891) found liking their instrument least influential to continued participation of all grade levels.

The response, I play my instrument well was considered next in order of importance for this statement 21 (mean = 2.978). Playing the instrument well was a more important influence to males (mean = 2.600) who considered the response "Important," than to females (mean = 3.068) who considered the response "Neutral." Ninth- (mean = 2.844) and twelfth-grade (mean = 2.864) students considered playing the instrument well an important influence while tenth- (mean = 3.067) and eleventh-graders (mean = 3.135) considered it a "Neutral" influence in the decision to continue participation.

I enjoy the music we play, was "Neutral" as an influence for continuing in orchestra (mean = 3.000). Enjoying the music was less important for males (mean = 3.371) than females (mean = 2.912). While scores for the grade levels were similar, tenth- (mean = 2.950) and twelfth-grade subjects (mean = 2.955) enjoyed the music more and considered it more important than ninth- (mean = 3.000) and eleventh-grade subjects (mean = 3.108).

I like being part of the group, while still "Neutral," was slightly less important than enjoying the music (mean = 3.257). The mean scores for this response were very similar for both genders, and all grades levels. This indicated a high level of agreement toward group acceptance being an important factor for orchestral continuation. Being part of the group was slightly more important for males (mean = 3.200) than females (mean = 3.270). Tenth- (mean = 3.200) and twelfth-grade subjects (mean = 3.227) considered group membership more important than ninth- and eleventh grade subjects who recorded the same mean score (3.297).

The factor, I like the teacher, was the least important influence on a students' decision to remain in orchestra (mean = 4.033). Only males (mean = 3.771) considered teachers to be a "Neutral" influence, females considered teachers to be "Not Important"

(mean = 4.095). All grade levels reported that their affection toward the teacher to be unimportant in their decision to continue in orchestra (ninth-grade mean = 4.016; tenth-grade mean = 4.050; eleventh-grade mean = 4.000; twelfth-grade mean = 4.091).

Subjects did not indicate strong feelings about the responses to statement 22, The most important influence on me in continuing my participation in orchestra is. The factor, My parents (mean = 2.295) was most influential overall. The mean indicates parents fall into the "Important" category. Parents were viewed more as an influence to continued participation for females (mean = 2.270) than males (mean = 2.400). Parents were influential for all grade levels except twelfth-graders (mean scores, ninth-grade = 2.078; tenth-grade = 2.400; eleventh-grade = 2.270; twelfth grade = 2.682).

Twelfth-grade students (mean = 2.636) considered, the orchestra director, to be a slightly more important influence on continued participation. The orchestral director was an important influence for the other grade levels (mean scores, ninth-grade = 2.797; tenth-grade = 2.850; eleventh-grade = 2.784), but not as important as parents. The orchestra director, while still in the "Important " category, was considered less influential regarding continued participation than parents (mean = 2.792). Females (mean = 2.571) considered the orchestra director less important than males (mean = 2.571).

The other three responses to statement 22, my friends, it's easy to get a good grade and my parents bought the instrument were all considered "Neutral" responses. It's easy to get a good grade, was indicated to be the third most important influence for continued participation (mean = 3.142). This response was more influential for continued participation for females (mean = 3.095) than males (mean = 3.343). Tenth- (mean = 3.033) and twelfth-grade subjects (mean = 3.045) found an easy grade to be more influential for continued participation than ninth- (mean = 3.156) and eleventh-grade subjects (mean = 3.351).

Friends were the factor found to be the next most important influence for continued participation in orchestra for eleventh-grade subjects (mean = 2.730). Eleventh-graders were also the only group to consider the response my friends, to be "Important." Overall the response, my friends, was considered slightly less important than an easy grade as an influence to continue participation in orchestra (mean = 3.236). Males (mean = 3.343) indicated friends to be a slightly less important influence than females (mean = 3.211). Ninth-grade students indicated friends to be least influential of all responses to statement 22 (mean = 3.625).

For ninth-grade subjects, their parents purchase of the instrument was more influential in their decision to continue in orchestra than friends. Overall the factor, my parents bought the instrument, was least influential on continued participation in orchestra (mean = 3.563). Females (mean = 3.608) indicated this response to less influential than males (mean = 3.371). All grade levels, except ninth-graders, considered this response to be least important as an influence in continued participation for statement 22 (tenth-grade mean = 3.567; eleventh-grade mean = 3.865; twelfth-grade mean = 3.591).

Of the five responses to statement 23, The thing I like most about orchestra is, performing was the most important (mean = 2.181). Eleventh-graders found performing to be "Most Important" (mean = 1.946) while the other grade levels indicated performing was merely "Important" (twelfth grade mean = 2.000; tenth-grade mean = 2.271; ninth-grade mean = 2.297). Scores indicated performing was slightly more important to females (mean = 2.163) than male (mean = 2.257).

Learning the music, while still "Important," was recorded as being less enjoyable than performing (mean = 2.404). Males (mean = 2.800) indicated they did not like learning the music as much as females (mean = 2.311). Of the grade levels, eleventh-graders indicated they enjoyed learning the music the most (mean = 2.189), followed by

ninth-graders (mean = 2.391), twelfth-graders (mean = 2.500). Tenth-graders least liked learning the music (mean = 2.517).

Being a member of a group, was next in order of importance (mean = 3.249). Followed by being with my friends (mean = 3.462). Males reported they liked being a member of a group (mean = 3.091) and being with their friends (mean = 3.059) more than females (mean scores 3.284 and 3.554 respectively). For males, being with friends was more important than being a member of a group, while the opposite was true for females. Ninth-, eleventh- and twelfth-grade subjects reported being a member of a group (mean scores 3.238, 3.459 and 3.045 respectively) to be more important than being with friends (mean scores 3.556, 3.649 and 3.591 respectively). While tenth-grade subjects found it slightly more important to be with friends than (mean = 3.200) to be part of a group (mean = 3.203).

The music the teacher chooses, was the least important response to statement 23 (mean = 3.672) although still in the "Neutral" category. Twelfth-graders least liked the music chosen by the teacher (mean = 3.864). Eleventh- (mean = 3.757) and tenth-graders (mean = 3.750) liked music chosen by the teacher only slightly more than twelfth graders. Ninth-grade subjects however, liked the music chosen by the teacher more than they liked being with their friends (mean = 3.484). The music chosen by the teacher was preferred less by male (mean = 3.714) subjects than female subjects (mean = 3.662).

Table VI shows the t-test results according to gender for statements three through nineteen. Responses of male and female subjects were compared to identify significant differences between gender. Significance was tested at $p < .05$. Differences in the response to the statements were mostly found to be insignificant.

Statements 3, 7 and 11 elicited responses dealing with motivational factors. Responses to these statements indicated insignificant differences between genders ($p = .591$; $p = .279$; $p = .197$ respectively). Subjects appeared motivated to practice because

Table V

Frequency of Responses with (%) to Survey Statements 20-23 (N=183)

Statement: 20. The reason I decided to play a stringed instrument was...

1. my parents encouraged me to.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	29 (15.8)	29 (15.8)	53 (29.0)	46 (25.1)	26 (14.2)		3.060	1.272
M	4 (11.4)	7 (20.0)	10 (28.6)	10 (28.6)	4 (11.4)		3.086	1.197
F	25 (16.9)	22 (14.9)	43 (29.1)	36 (24.3)	22 (14.9)		3.054	1.292
9th	14 (21.9)	11 (17.2)	19 (29.7)	13 (20.3)	7 (10.9)		2.813	1.296
10th	10 (16.7)	11 (18.3)	13 (21.7)	13 (21.7)	13 (21.7)		3.133	1.396
11th	3 (8.1)	5 (13.5)	15 (40.5)	10 (27.0)	4 (10.8)		3.189	1.076
12th	2 (9.1)	2 (9.1)	6 (27.3)	10 (45.5)	2 (9.1)		3.364	1.093

2. my friends were going to play an instrument.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	10 (3.3)	20 (10.9)	19 (10.4)	37 (20.2)	97 (53.0)		4.044	1.253
M	2 (5.7)	5 (14.3)	3 (8.6)	8 (22.9)	17 (48.6)		3.943	1.305
F	8 (5.4)	15 (10.1)	16 (10.8)	29 (19.6)	80 (54.1)		4.068	1.244
9th	2 (3.1)	7 (10.9)	5 (7.8)	15 (23.4)	35 (54.7)		4.156	1.158
10th	6 (10.0)	9 (15.0)	11 (18.3)	11 (18.3)	23 (38.3)		3.600	1.392
11th	1 (2.7)	2 (5.4)	2 (5.4)	6 (16.2)	26 (70.3)		4.459	1.016
12th	1 (4.5)	2 (9.1)	1 (4.5)	5 (22.7)	13 (59.1)		4.227	1.193

3. I liked the teacher.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	6 (3.3)	22 (12.0)	56 (30.6)	59 (32.2)	40 (21.9)		3.574	1.061
M	2 (5.7)	2 (5.7)	9 (25.7)	11 (31.4)	11 (31.4)		3.771	1.140
F	4 (2.7)	20 (13.5)	47 (31.8)	48 (32.4)	29 (19.6)		3.527	1.040
9th	1 (1.6)	7 (10.9)	21 (32.8)	22 (34.4)	13 (20.3)		3.609	.986
10th	4 (6.7)	6 (15.0)	15 (25.0)	20 (33.3)	15 (25.0)		3.600	1.167
11th	1 (2.7)	5 (13.5)	11 (29.7)	14 (37.8)	6 (16.2)		3.514	1.017
12th	0 (0.0)	4 (18.2)	9 (40.9)	3 (13.6)	6 (27.3)		3.500	1.102

Table V (continued)

Frequency of Responses with (%) to Survey Statements 20-23 (N=183)

4. I liked the sound of the instrument.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	70 (38.3)	40 (21.9)	31 (16.9)	30 (16.4)	12 (6.6)		2.311	1.308
M	11 (31.4)	8 (22.9)	8 (22.9)	6 (17.1)	2 (5.7)		2.429	1.267
F	59 (39.9)	32 (21.6)	23 (15.5)	24 (16.2)	10 (6.8)		2.284	1.320
9th	23 (35.9)	14 (21.9)	11 (17.2)	10 (15.6)	6 (9.4)		2.406	1.365
10th	16 (26.7)	10 (16.7)	15 (25.0)	13 (21.7)	6 (10.0)		2.717	1.342
11th	19 (51.4)	11 (29.7)	2 (5.4)	5 (13.5)	0 (0.0)		1.811	1.050
12th	12 (54.5)	5 (22.7)	3 (13.6)	2 (9.1)	0 (0.0)		1.773	1.020

5. I thought I would be good at it.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	70 (38.3)	72 (39.3)	24 (13.1	11 (6.0)	6 (3.3)		1.967	1.027
M	16 (45.7)	13 (37.1)	5 (14.3)	0 (0.0)	1 (2.9)		1.771	.910
F	54 (36.5)	59 (39.9)	19 (12.8)	11 (7.4)	5 (3.4)		2.014	1.050
9th	25 (39.1)	26 (40.6)	8 (12.5)	4 (6.3)	1 (1.6)		1.906	.955
10th	24 (40.0)	24 (40.0)	6 (10.0)	3 (5.0)	3 (5.0)		1.950	1.080
11th	13 (35.1)	14 (37.8)	7 (18.9)	2 (5.4)	1 (2.7)		2.027	1.013
12th	8 (36.4)	8 (36.4)	3 (13.6)	2 (9.1)	1 (4.5)		2.091	1.151

Statement: 21. I have continued to participate in orchestra because...

1. I play my instrument well.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	26 (14.2)	45 (24.6)	48 (26.2)	35 (19.1)	29 (15.8)		2.978	1.284
M	7 (20.0)	12 (34.3)	7 (20.0)	6 (17.1)	3 (8.6)		2.600	1.241
F	19 (12.8)	33 (22.3)	41 (27.7)	29 (19.6)	26 (17.6)		3.068	1.281
9th	10 (15.6)	13 (20.3)	25 (39.1)	9 (14.1)	7 (10.9)		2.844	1.185
10th	11 (18.3)	13 (21.7)	11 (18.3)	11 (18.3)	14 (23.3)		3.067	1.448
11th	2 (5.4)	12 (32.4)	8 (21.6)	9 (24.3)	6 (16.2)		3.135	1.206
12th	3 (13.6)	7 (31.8)	4 (18.2)	6 (27.3)	2 (9.1)		2.864	1.246

Table V (continued)

Frequency of Responses with (%) to Survey Statements 20-23 (N=183)

2. I like the teacher.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	4 (2.2)	16 (8.7)	33 (18.0)	47 (25.7)	83 (45.4)		4.033	1.089
M	2 (5.7)	4 (11.4)	7 (20.2)	9 (25.7)	13 (37.1)		3.771	1.239
F	2 (1.4)	12 (8.1)	26 (17.6)	38 (25.7)	70 (47.3)		4.095	1.045
9th	3 (4.7)	7 (10.9)	6 (9.4)	18 (28.1)	30 (46.9)		4.016	1.202
10th	1 (1.7)	4 (6.7)	12 (20.0)	17 (28.3)	26 (43.3)		4.050	1.032
11th	0 (0.0)	3 (8.1)	11 (29.1)	6 (16.2)	17 (45.9)		4.000	1.054
12th	0 (0.0)	2 (9.1)	4 (18.2)	6 (27.3)	10 (45.5)		4.091	1.019

3. I enjoy the music we play.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	20 (10.9)	51 (27.9)	44 (24.0)	45 (24.6)	23 (12.6)		3.000	1.213
M	4 (11.4)	7 (20.0)	5 (14.3)	10 (28.6)	9 (25.7)		3.371	1.374
F	16 (10.8)	44 (29.7)	39 (26.4)	35 (23.6)	14 (9.5)		2.912	1.160
9th	7 (10.9)	16 (25.0)	18 (28.1)	16 (25.0)	7 (10.9)		3.000	1.182
10th	7 (11.7)	17 (28.3)	16 (26.7)	12 (20.0)	8 (13.3)		2.950	1.227
11th	3 (8.1)	11 (29.7)	7 (18.7)	11 (29.7)	5 (13.5)		3.108	1.220
12th	3 (13.6)	7 (31.8)	3 (13.6)	6 (27.3)	3 (13.6)		2.955	1.327

4. I like being part of a group.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	23 (12.6)	34 (18.6)	40 (21.9)	45 (24.6)	41 (22.4)		3.257	1.332
M	5 (14.3)	4 (11.4)	12 (34.3)	7 (20.0)	7 (20.0)		3.200	1.302
F	18 (12.2)	30 (20.3)	28 (18.9)	38 (25.7)	34 (23.0)		3.270	1.343
9th	9 (14.1)	12 (18.8)	10 (15.6)	17 (26.6)	16 (25.0)		3.297	1.399
10th	7 (11.7)	12 (20.0)	14 (23.3)	16 (26.7)	11 (18.3)		3.200	1.286
11th	4 (10.8)	6 (16.2)	10 (27.0)	9 (24.3)	8 (21.6)		3.297	1.288
12th	3 (13.6)	4 (18.2)	6 (27.3)	3 (13.6)	6 (27.3)		3.227	1.412

Table V (continued)

Frequency of Responses with (%) to Survey Statements 20-23 (N=183)

5. I like playing my instrument.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	110 (60.1)	37 (20.2)	18 (9.8)	12 (6.6)	6 (3.3)		1.727	1.090
M	17 (48.6)	8 (22.9)	4 (11.4)	3 (8.6)	3 (8.6)		2.057	1.327
F	93 (62.8)	29 (19.6)	14 (9.5)	9 (6.1)	3 (2.0)		1.649	1.016
9th	34 (53.1)	16 (25.0)	5 (7.8)	5 (7.8)	4 (6.3)		1.891	1.223
10th	34 (56.7)	14 (23.3)	7 (11.7)	4 (6.7)	1 (1.7)		1.733	1.023
11th	28 (75.7)	5 (13.5)	1 (2.7)	2 (5.4)	1 (2.7)		1.459	.989
12th	14 (63.6)	2 (9.1)	5 (22.7)	1 (4.5)	0 (0.0)		1.682	.995

Statement: 22. The most important influence on me in continuing my participation in orchestra is...

1. my friends.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	19 (10.4)	35 (19.1)	52 (28.4)	36 (19.7)	40 (21.9)	1 (0.5)	3.236	1.281
M	6 (17.1)	5 (14.3)	5 (14.3)	9 (25.7)	10 (28.6)		3.343	1.474
F	13 (8.8)	30 (20.3)	47 (31.8)	27 (18.2)	30 (20.3)	1 (0.7)	3.211	1.234
9th	3 (4.7)	6 (9.4)	19 (29.7)	20 (31.3)	16 (25.0)		3.625	1.106
10th	6 (10.0)	13 (21.7)	18 (30.0)	7 (11.7)	15 (25.0)	1 (1.7)	3.203	1.323
11th	7 (18.9)	10 (27.0)	11 (29.7)	4 (10.8)	5 (13.5)		2.730	1.283
12th	3 (13.6)	6 (27.3)	4 (18.2)	5 (22.7)	4 (18.2)		3.045	1.362

2. it's easy to get a good grade.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	31 (16.9)	36 (19.7)	31 (16.9)	46 (25.1)	39 (21.3)		3.142	1.403
M	5 (14.3)	5 (14.3)	6 (17.1)	11 (31.4)	8 (22.9)		3.343	1.371
F	26 (17.6)	31 (20.9)	25 (16.9)	35 (23.6)	31 (20.9)		3.095	1.411
9th	12 (18.8)	11 (17.2)	10 (15.6)	17 (26.6)	14 (21.9)		3.156	1.439
10th	9 (15.0)	17 (28.3)	9 (15.0)	13 (21.7)	12 (20.0)		3.033	1.390
11th	5 (13.5)	6 (16.2)	6 (16.2)	11 (29.7)	9 (24.3)		3.351	1.379
12th	5 (22.7)	2 (9.1)	6 (27.3)	5 (22.7)	4 (18.2)		3.045	1.430

Table V (continued)

Frequency of Responses with (%) to Survey Statements 20-23 (N=183)

3. the orchestra director.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	41 (22.4)	40 (21.9)	42 (23.0)	36 (19.7)	24 (13.1)		2.792	1.343
M	9 (25.7)	9 (25.7)	9 (25.7)	4 (11.4)	4 (11.4)		2.571	1.313
F	32 (21.6)	31 (20.9)	33 (22.3)	32 (21.6)	20 (13.5)		2.845	1.349
9th	11 (17.2)	17 (26.6)	16 (25.0)	14 (21.9)	6 (9.4)		2.797	1.237
10th	16 (26.7)	7 (11.7)	15 (25.0)	14 (23.3)	8 (13.3)		2.850	1.400
11th	8 (21.6)	8 (21.6)	9 (24.3)	8 (21.6)	4 (10.8)		2.784	1.315
12th	6 (27.3)	8 (36.4)	2 (9.1)	0 (0.0)	6 (27.3)		2.636	1.590

4. my parents bought the instrument.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	22 (12.0)	24 (13.1)	33 (18.0)	37 (20.2)	67 (36.6)		3.563	1.405
M	3 (8.6)	8 (22.9)	7 (20.0)	7 (20.0)	10 (28.6)		3.371	1.352
F	19 (12.8)	16 (10.8)	26 (17.6)	30 (20.3)	57 (38.5)		3.608	1.417
9th	8 (12.5)	14 (21.9)	11 (17.2)	8 (12.5)	23 (35.9)		3.375	1.475
10th	8 (13.3)	5 (8.3)	12 (20.0)	15 (25.0)	20 (33.3)		3.567	1.382
11th	3 (8.1)	4 (10.8)	5 (13.5)	8 (21.6)	17 (45.9)		3.865	1.337
12th	3 (13.6)	1 (4.5)	5 (22.7)	6 (27.3)	7 (31.8)		3.591	1.368

5. my parents.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	69 (37.7)	48 (26.2)	23 (12.6)	29 (15.8)	14 (7.7)		2.295	1.322
M	12 (34.3)	8 (22.9)	7 (20.0)	5 (14.3)	3 (8.6)		2.400	1.333
F	57 (38.5)	40 (27.0)	16 (10.8)	24 (16.2)	11 (7.4)		2.270	1.323
9th	30 (46.9)	16 (25.0)	7 (10.9)	5 (7.8)	6 (9.4)		2.078	1.325
10th	20 (33.3)	18 (30.0)	5 (8.3)	12 (20.0)	5 (8.3)		2.400	1.355
11th	14 (37.8)	9 (24.3)	6 (16.2)	6 (16.2)	2 (5.4)		2.270	1.283
12th	5 (22.7)	5 (22.7)	5 (22.7)	6 (27.3)	1 (4.5)		2.682	1.249

Table V (continued)

Frequency of Responses with (%) to Survey Statements 20-23 (N=183)

Statement: 23. The thing I most like about orchestra is...

1. performing.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	77 (42.1)	44 (24.0)	30 (16.4)	13 (7.1)	18 (9.8)	1 (0.5)	2.181	1.319
M	17 (48.6)	4 (11.4)	5 (14.3)	6 (17.1)	3 (8.6)		2.257	1.442
F	60 (40.5)	40 (27.0)	25 (16.9)	7 (4.7)	15 (10.1)	1 (0.7)	2.163	1.293
9th	25 (39.1)	16 (25.0)	9 (14.1)	7 (10.9)	7 (10.9)		2.297	1.376
10th	23 (38.3)	16 (26.7)	9 (15.0)	3 (5.0)	8 (13.3)	1 (1.7)	2.271	1.388
11th	19 (51.4)	7 (18.9)	7 (18.9)	2 (5.4)	2 (5.4)		1.946	1.201
12th	10 (45.5)	5 (22.7)	5 (22.7)	1 (4.5)	1 (4.5)		2.000	1.155

2. learning the music.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	52 (28.4)	59 (32.2)	33 (18.0)	24 (13.1)	15 (8.2)		2.404	1.254
M	3 (8.6)	14 (40.0)	9 (25.7)	5 (14.3)	4 (11.4)		2.800	1.158
F	49 (33.1)	45 (30.4)	24 (16.2)	19 (12.8)	11 (7.4)		2.311	1.261
9th	17 (26.6)	22 (34.4)	13 (20.3)	7 (10.9)	5 (7.8)		2.391	1.217
10th	18 (30.0)	15 (25.0)	12 (20.0)	8 (13.3)	7 (11.7)		2.517	1.359
11th	9 (24.3)	18 (48.6)	5 (13.5)	4 (10.8)	1 (2.7)		2.189	1.023
12th	8 (36.4)	4 (18.2)	3 (13.6)	5 (22.7)	2 (9.1)		2.500	1.439

3. the music the teacher chooses.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	8 (4.4)	25 (13.7)	45 (24.6)	46 (25.1)	59 (32.2)		3.672	1.187
M	2 (5.7)	3 (8.6)	8 (22.9)	12 (34.3)	10 (28.6)		3.714	1.152
F	6 (4.1)	22 (14.9)	37 (25.0)	34 (23.0)	49 (33.1)		3.662	1.198
9th	3 (4.7)	9 (14.1)	20 (31.3)	18 (28.1)	14 (21.9)		3.484	1.127
10th	3 (5.0)	8 (13.3)	13 (21.7)	13 (21.7)	23 (38.3)		3.750	1.244
11th	2 (5.4)	5 (13.5)	7 (18.9)	9 (24.3)	14 (37.8)		3.757	1.256
12th	0 (0.0)	3 (13.6)	5 (22.7)	6 (27.3)	8 (36.4)		3.864	1.082

Table V (continued)

Frequency of Responses with (%) to Survey Statements 20-23 (N=183)

4. being with my friends.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	28 (15.3)	16 (8.7)	41 (22.4)	38 (20.8)	59 (32.2)	1 (0.5)	3.462	1.417
M	9 (25.7)	4 (11.4)	7 (20.0)	4 (11.4)	10 (28.6)	1 (2.9)	3.059	1.594
F	19 (12.8)	12 (8.1)	34 (23.0)	34 (23.0)	49 (33.1)		3.554	1.362
9th	11 (17.2)	4 (6.3)	11 (17.2)	13 (20.3)	24 (37.5)	1 (1.6)	3.556	1.490
10th	11 (18.3)	4 (6.7)	21 (35.0)	10 (16.7)	14 (23.3)		3.200	1.375
11th	4 (10.8)	3 (8.1)	6 (16.2)	13 (35.1)	11 (29.7)		3.649	1.296
12th	2 (9.1)	5 (22.7)	3 (13.6)	2 (9.1)	10 (45.5)		3.591	1.501

5. being a member of a group.

	MI	I	N	NI	LI	Missing	Mean	Std D
All	19 (10.4)	39 (21.3)	32 (17.5)	60 (32.8)	31 (16.9)	2 (1.1)	3.249	1.264
M	4 (11.4)	10 (28.6)	5 (14.3)	7 (20.0)	7 (20.0)	2 (5.7)	3.091	1.378
F	15 (10.1)	29 (19.6)	27 (18.2)	53 (35.8)	24 (16.2)		3.284	1.240
9th	8 (12.5)	14 (21.9)	9 (14.1)	19 (29.7)	13 (20.3)	1 (1.6)	3.238	1.353
10th	6 (10.0)	16 (26.7)	5 (8.3)	24 (40.0)	8 (13.3)	1 (1.7)	3.203	1.270
11th	3 (8.1)	4 (10.8)	12 (32.4)	9 (24.3)	9 (24.3)		3.459	1.216
12th	2 (9.1)	5 (22.7)	6 (27.3)	8 (36.4)	1 (4.5)		3.045	1.090

they enjoyed it. Females indicated they enjoyed practicing more than males. Subjects indicated that practicing as a class requirement was only somewhat motivational, while parents were not a motivational factor. Responses to statement 19 ($p = .689$) indicated students had confidence in their teachers, ability to teach them, demonstrating they felt orchestra was a worthwhile activity.

Statements eliciting responses to psychological factors also demonstrated insignificant differences. Statements 8 and 9 ($p = .851$ and $p = .100$) indicated both male and female subjects did not feel stringed instruments would be difficult to learn, nor was it important that the teacher make them seem easy. In response to statement 11, subjects indicated they liked the timbre of their instrument ($p = .197$). However, females demonstrated a stronger attraction to the instrument timbre. Responses to statement 16 indicated that both males and females demonstrated high self-concept in orchestra.

Most responses to statements dealing with sociological factors also demonstrated insignificant difference between genders. Friends were not deemed an important influence in beginning an orchestral instrument (statement 4, $p = .608$) or in the decision to continue participation in orchestra (statement 15, $p = .089$). However, males indicated peers were a stronger influence for them. While parents were not directly considered important in the decision to continue participation (statement 6, $p = .286$), subjects indicated that their parents regularly attended their concerts (statement 17, $p = .708$). Most subjects also indicated they felt encouraged by their teachers to continue participation (statement 5, $p = .128$). Females indicated they felt less encouraged than males. Responses to statement 12 ($p = .601$) recorded most subjects' intentions to continue playing their instruments after high school.

Three statements elicited responses that demonstrated significant differences between males and females. Responses to statement 18, my orchestra director thinks I am successful in orchestra, were found to be highly significant ($p = .028$). Both genders felt

the orchestra director considered them successful. However, males demonstrated more confidence in their teachers' opinion than females.

Responses to statements 13, I feel orchestra is more for girls than boys, ($p = .001$) and 14, I feel orchestra is more for boys than girls, ($p = .004$) were also found to be highly significant. While males and females disagreed with both statements, males demonstrated more gender biases. Males did not disagree as strongly as females with either statement. Some males indicated orchestra was more for girls, while others felt is was more for boys.

Table VII shows the t-test results of grade comparison for statements three through nineteen. The grade level comparison was ninth- and tenth-grade (lower-classmen) to eleventh- and twelfth-grade (upper-classmen). The differences in responses were significant when $p < .05$. Responses to most of the statements were found to have insignificant differences.

Differences in responses regarding motivational factors were largely insignificant. Responses to statements 3 ($p = .538$) and 10 ($p = .315$) indicated extrinsic motivators were not effective. Students indicated they were only somewhat motivated to practice because it was a class requirement. Subjects also indicated they were not motivated to practice because their parents made them. Older students demonstrated more confidence in their teachers' knowledge about stringed instruments than younger students (statement 19, $p = .606$), yet both groups felt teachers were knowledgeable.

No significant differences were found regarding psychological factors between grade levels. Statements 8 and 9, regarding perceived difficulty of the instruments, indicated students felt the instruments would be somewhat difficult to learn, yet the teacher made learning the instrument seem somewhat easy ($p = .772$ and $p = .463$). These responses indicated students did not doubt their ability to be successful with a stringed instrument. Upper-classmen indicated a stronger preference for the sound of their instrument, yet both groups reported to like the sound of their instrument (statement 11, p

Table VI

T-test for Independent Samples of Gender for Statements 3-19

Variable	Number of cases	Mean	Std D	Pooled Variance Estimate t Value	Degree of Freedom	2-tail Prob.
3. I practice my instrument because it is a class requirement.						
Male	34	4.2941	1.7515	-.54	180	.591
Female	148	4.4527	1.509			
4. I decided to play an instrument because my friends were going to play an instrument.						
Male	35	5.6286	.808	.41	181	.608
Female	148	5.5405	1.197			
5. My orchestra teacher encourages me to continue in orchestra.						
Male	35	1.8857	1.323	-1.53	181	.128
Female	148	2.3581	1.710			
6. I participate in orchestra because my parents want me to.						
Male	35	4.3714	1.646	-1.07	181	.286
Female	148	4.7095	1.687			
7. I enjoy practicing.						
Male	35	3.0571	1.731	1.09	181	.279
Female	148	2.7230	1.615			

Table VI (continued)

T-test for Independent Samples of Gender for Statements 3-19

Variable	Number of cases	Mean	Std D	Pooled Variance Estimate t Value	Degree of Freedom	2-tail Prob.
8. I thought it would be hard to learn how to play a stringed instrument.						
Male	35	4.2000	1.712	.19	181	.851
Female	148	4.1419	1.633			
9. I decided to participate in orchestra because the teacher made it seem easy.						
Male	35	5.000	1.283	1.65	181	.100
Female	148	4.5405	1.523			
10. My parents make me practice.						
Male	35	5.0857	1.292	-.56	180	.573
Female	147	5.2177	1.230			
11. I like the sound of my instrument.						
Male	35	2.2000	1.491	1.30	181	.197
Female	148	1.8851	1.243			
12. I plan to continue playing my instrument after high school.						
Male	35	2.6571	1.955	-.52	181	.601
Female	148	2.8446	1.891			

Table VI (continued)

T-test for Independent Samples of Gender for Statements 3-19

Variable	Number of cases	Mean	Std D	Pooled Variance Estimate t Value	Degree of Freedom	2-tail Prob.
13. I feel orchestra is more for girls than boys.						
Male	35	4.7714	1.816	-3.50	181	.001
Female	148	5.5676	1.018			
14. I feel orchestra is more for boys than girls.						
Male	35	5.4286	1.008	-2.93	181	.040
Female	148	5.8041	.579			
15. I continue to play in orchestra because my friends are in orchestra.						
Male	35	4.6857	1.568	-1.71	181	.089
Female	148	5.1419	1.380			
16. I feel sucessful in orchestra.						
Male	35	2.5143	1.616	-.59	181	.559
Female	148	2.6824	1.508			
17. My parents attend my orchestra concerts.						
Male	35	1.8571	1.556	-.38	181	.708
Female	148	1.9662	1.545			

Table VI (continued)

T-test for Independent Samples of Gender for Statements 3-19

Variable	Number of cases	Mean	Std D	Pooled Variance Estimate t Value	Degree of Freedom	2-tail Prob.
18. My orchestra director thinks I am successful in orchestra.						
Male	35	2.1714	1.465	-2.22	181	.028
Female	148	2.7770	1.447			
19. My director is knowledgeable about stringed instruments.						
Male	34	2.1471	1.480	.40	179	.689
Female	147	2.0408	1.374			

= .071). Feeling successful in orchestra was another common trait reported by both grade levels (statement 16, p = .888).

Differences in responses for sociological factors, were mostly insignificant. Statement 4 responses indicated subjects from both groups put little importance in the opinions of friends when they decided to begin instruction on a stringed instrument (p = .567). According to statement 15 responses, peers do have slightly more impact on a student's decision to continue in orchestra however, especially for lower-classmen (p = .331). Teachers were influential on students' decisions to continue participation. Most students reported they were encouraged to continue and their orchestra director thinks they are successful (statements 5, p = .088 and 18, p = .518). However, upper-classmen reported feeling more encouraged by teachers than lower-classmen (statement 5). Both groups agreed they do not associate orchestra as a "male" activity (statement 14. p = .237). Upper-classmen had stronger intentions to continue playing their instrument after high school than lower-classmen (statement 12, p = .141) Students also agreed their parents attended their concerts regularly (statement 17, p = .251).

Responses to only three statements demonstrated significant differences. Upper-classmen indicated they enjoyed practicing their instrument much more than lower-classmen, this difference was highly significant (statement 7, p = .002), and indicated upper-classmen demonstrate more intrinsic motivation traits. Responses to statement 7 (p = .038) indicated lower-classmen were influenced by their parents significantly more than upper-classmen. Responses to statement 13 (p = .049) indicated that lower-classmen demonstrated more gender biases than upper-classmen. Lower-classmen associated orchestra more often as a "female" activity than upper-classmen.

Table VIII shows the results of the Analysis of Variance (ANOVA) by grade level for statements 3 through 19. The responses of each grade level (9 through 12) were

Table VII

T-test for Independent Samples of Grade for Statements 3-19

Variable	Number of cases	Mean	Std D	Pooled Variance Estimate t Value	Deg. of Free.	2-tail Prob.
3. I practice my instrument because it is a class requirement.						
Grade 9 & 10	123	4.3740	1.501	-.62	180	.538
Grade 11 & 12	59	4.5254	1.644			
4. I decided to play an instrument because my friends were going to play an instrument.						
Grade 9 & 10	124	5.5242	1.186	-.57	181	.567
Grade 11 & 12	59	5.6271	1.015			
5. My orchestra teacher encourages me to continue in orchestra.						
Grade 9 & 10	124	2.4113	1.697	1.71	181	.088
Grade 11 & 12	59	1.9661	1.520			
6. I participate in orchestra because my parents want me to.						
Grade 9 & 10	124	4.4677	1.750	-2.09	181	.038
Grade 11 & 12	59	5.0169	1.468			
7. I enjoy practicing.						
Grade 9 & 10	124	3.0403	1.650	3.10	181	.002
Grade 11 & 12	59	2.2542	1.492			

Table VII (continued)

T-test for Independent Samples of Grade for Statements 3-19

Variable	Number of cases	Mean	Std D	Pooled Variance Estimate t Value	Deg. of Free.	2-tail Prob.
8. I thought it would be hard to learn how to play a stringed instrument.						
Grade 9 & 10	124	4.1774	1.648	.29	181	.772
Grade 11 & 12	59	4.1017	1.647			
9. I decided to participate in orchestra because the teacher made it seem easy.						
Grade 9 & 10	124	4.5726	1.504	-.74	181	.463
Grade 11 & 12	59	4.7458	1.457			
10. My parents make me practice.						
Grade 9 & 10	124	5.1290	1.331	-1.01	180	.315
Grade 11 & 12	58	5.3276	1.015			
11. I like the sound of my instrument.						
Grade 9 & 10	124	2.0645	1.330	1.82	181	.071
Grade 11 & 12	59	1.6949	1.193			
12. I plan to continue playing my instrument after high school.						
Grade 9 & 10	124	2.9516	1.962	1.48	181	.141
Grade 11 & 12	59	2.5085	1.736			

Table VII (continued)

T-test for Independent Samples of Grade for Statements 3-19

Variable	Number of cases	Mean	Std D	Pooled Variance Estimate t Value	Deg. of Free.	2-tail Prob.
13. I feel orchestra is more for girls than boys.						
Grade 9 & 10	124	5.2903	1.424	-1.98	181	.049
Grade 11 & 12	59	5.6780	.681			
14. I feel orchestra is more for boys than girls.						
Grade 9 & 10	124	5.7742	.609	1.19	181	.237
Grade 11 & 12	59	5.6441	.846			
15. I continue to play in orchestra because my friends are in orchestra.						
Grade 9 & 10	124	4.9839	1.487	-.97	181	.331
Grade 11 & 12	59	5.2034	1.284			
16. I feel sucessful in orchestra.						
Grade 9 & 10	124	2.6613	1.572	.14	181	.888
Grade 11 & 12	59	2.6271	1.437			
17. My parents attend my orchestra concerts.						
Grade 9 & 10	124	1.8548	1.480	-1.15	181	.251
Grade 11 & 12	59	2.1356	1.666			

Table VII (continued)

T-test for Independent Samples of Grade for Statements 3-19

Variable	Number of cases	Mean	Std D	Pooled Variance Estimate t Value	Deg. of Free.	2-tail Prob.
18. My orchestra director thinks I am successful in orchestra.						
Grade 9 & 10	124	2.7097	1.534	.65	181	.518
Grade 11 & 12	59	2.5593	1.317			
19. My director is knowledgeable about stringed instruments.						
Grade 9 & 10	123	2.0976	1.490	.52	179	.606
Grade 11 & 12	58	1.9828	1.162			

compared to each other. The differences in the responses are significant when $p < .05$. Few significant differences were found in responses to the statements.

Differences in responses to statements involving motivational factors were mostly insignificant. For statement 3 ($p = .810$), all grade levels agreed that practice as a class requirement was only slightly motivational. Parental practice requirements were even less motivational (statement 10, $p = .245$). However, ninth-graders demonstrated parents to be more motivational than older students. While students agreed their orchestra director was knowledgeable (statement 19, $p = .099$), ninth- and twelfth-grade subjects indicated more confidence in their teachers knowledge, which made orchestra more worthy of effort for them.

Responses to statements regarding psychological factors were all found to be insignificant. Responses to statement 8 ($p = .580$) indicated tenth- and twelfth-grade subjects demonstrated less confidence in their ability to learn a stringed instrument than ninth- and eleventh graders. However, none of the grade levels indicated they thought learning an instrument would be very difficult. All grade levels agreed that the teacher making the instrument appear easy was not an important factor in their decision to begin instruction on a stringed instrument (statement 9, $p = .817$). While there was a high level of agreement about liking the sound of their instrument (statement 11, $p = .270$), appreciation of the instrument's sound was highest for twelfth-graders. All students agreed with statement 16 ($p = .520$) indicating they were successful in orchestra. Twelfth-grade subjects demonstrated the highest amount of self-confidence in orchestra.

Most statements regarding sociological factors demonstrated insignificant differences. All grade levels "Disagreed" with statement 4 ($p = .497$), indicating friends were not a factor in their decision to begin string instruction. However, tenth-grade subjects found friends to be slightly more important to the decision to continue participation than the rest of the students (statement 15, $p = .511$). Responses to

statement 5 ($p = .151$) indicated students felt encouraged by their teachers to continue participation. Twelfth-grade students indicated they were strongly encouraged to participate. The data indicated that students felt less encouraged to participate the younger they were. While younger subjects felt encouraged to participate by their teachers, they had less confidence in their teacher's opinion of their achievement (statement 18, $p = .534$). No gender biases were demonstrated by individual grade levels (statement 13, $p = .230$; statement 14, $p = .275$). Subjects did not indicate they felt orchestra was associated with either gender. Responses to statement 17 ($p = .683$) indicated students were supported by parents regularly attending their concerts. Parental support is highest for ninth-grade subjects and decreased as students got older. Twelfth-grade students indicated the strongest intentions to continue playing their instrument after high school. Intentions to continue participation were high, yet decreased as for younger students (statement 12, .585).

Only two statements had significant differences in their responses. Responses to statement 6 ($p = .059$) indicated parents exerted more influence on ninth-, tenth-, and twelfth-grade subjects' decisions to participate in orchestra. Eleventh-graders indicated parents were significantly less influential in their decision to continue participation. Significant differences to statement 7 were also found ($p = .022$). Ninth-grade students demonstrated less intrinsic motivation to practice than eleventh-grade students.

Table IX shows results of the Mann-Whitney U by gender for questions 20 through 23. The responses of each gender were compared to each other. The differences in the responses are significant when $p < .05$. Few significant differences were reported between genders.

Statement 20 indicated no significant differences by gender in the five responses. While males demonstrated more confidence in their ability to learn the instrument than females both genders indicated they were confident they could learn the instrument

Table VIII

Analysis of Variance by Grade for Statements 3-29

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
3. I practice my instrument because it is a class requirement.					
Main Effects	2.329	3	.776	.321	.810
Grade	2.329	3	.776	.321	.810
Explained	2.329	3	.776	.321	.810
Residual	430.094	178	2.416		
Total	432.423	181	2.389		
4. I decided to play an instrument because my friends were going to play an instrument.					
Main Effects	3.089	3	1.030	.798	.497
Grade	3.089	3	1.030	.798	.497
Explained	3.089	3	1.030	.798	.497
Residual	229.746	178	1.291		
Total	232.835	181	1.286		
5. My orchestra teacher encourages me to continue in orchestra.					
Main Effects	14.500	3	4.833	1.787	.151
Grade	14.500	3	4.833	1.787	.151
Explained	14.500	3	4.833	1.787	.151
Residual	481.308	178	2.704		
Total	495.808	181	2.739		
6. I participate in orchestra because my parents want me to.					
Main Effects	20.887	3	6.962	2.528	.059
Grade	20.887	3	6.962	2.528	.059
Explained	20.887	3	6.962	2.528	.059
Residual	490.306	178	2.755		
Total	511.192	181	2.824		
7. I enjoy practicing.					
Main Effects	25.225	3	8.408	3.303	.022
Grade	25.225	3	8.408	3.303	.022
Explained	25.225	3	8.408	3.303	.022
Residual	453.083	178	2.545		
Total	478.308	181	2.643		

Table VIII (continued)

Analysis of Variance by Grade

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
8. I thought it would be hard to learn how to play a stringed instrument.					
Main Effects	5.381	3	1.794	.657	.580
Grade	5.381	3	1.794	.657	.580
Explained	5.381	3	1.794	.657	.580
Residual	486.311	178	2.732		
Total	491.692	181	2.717		
9. I decided to participate in orchestra because the teacher made it seem easy.					
Main Effects	2.106	3	.702	.312	.817
Grade	2.106	3	.702	.312	.817
Explained	2.106	3	.702	.312	.817
Residual	400.229	178	2.248		
Total	402.335	181	2.223		
10. My parents make me practice.					
Main Effects	6.413	3	2.138	1.400	.245
Grade	6.413	3	2.138	1.400	.245
Explained	6.413	3	2.138	1.400	.245
Residual	271.856	178	1.527		
Total	278.269	181	1.537		
11. I like the sound of my instrument.					
Main Effects	6.612	3	2.204	1.317	.270
Grade	6.612	3	2.204	1.317	.270
Residual	297.943	178	1.674	1.317	.270
Total	304.555	181	1.683		
12. I plan to continue playing my instrument after high school.					
Main Effects	7.060	3	2.353	.648	.585
Grade	7.060	3	2.353	.648	.585
Explained	7.060	3	2.353	.648	.585
Residual	645.957	178	3.629		
Total	653.016	181	3.608		

Table VIII (continued)

Analysis of Variance by Grade

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
13. I feel orchestra is more for girls than boys.					
Main Effects	6.703	3	2.234	1.450	.230
Grade	6.703	3	2.234	1.450	.230
Explained	6.703	3	2.234	1.450	.230
Residual	275.734	179	1.540		
Total	282.437	182	1.552		
14. I feel orchestra is more for boys than girls.					
Main Effects	1.880	3	.627	1.304	.275
Grade	1.880	3	.627	1.304	.275
Explained	1.880	3	.627	1.304	.275
Residual	86.000	179	.480		
Total	87.880	182	.483		
15. I continue to play in orchestra because my friends are in orchestra.					
Main Effects	4.718	3	1.573	.772	.511
Grade	4.718	3	1.573	.772	.511
Explained	4.718	3	1.573	.772	.511
Residual	364.735	179	2.038		
Total	369.454	182	2.030		
16. I feel successful in orchestra.					
Main Effects	5.298	3	1.766	.756	.520
Grade	5.298	3	1.766	.756	.520
Explained	5.298	3	1.766	.756	.520
Residual	418.319	179	2.337		
Total	423.617	182	2.328		
17. My parents attend my orchestra concerts.					
Main Effects	3.596	3	1.199	.499	.683
Grade	3.596	3	1.199	.499	.683
Explained	3.596	3	1.199	.499	.683
Residual	429.858	179	2.401		
Total	433.454	182	2.382		

Table VIII (continued)

Analysis of Variance by Grade

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
18. My orchestra director thinks I am successful in orchestra.					
Main Effects	4.789	3	1.596	.733	.534
Grade	4.789	3	1.596	.733	.534
Explained	4.789	3	1.596	.733	.534
Residual	385.653	177	2.179		
Total	390.442	180	2.169		
19. My director is knowledgeable about stringed instruments.					
Main Effects	12.118	3	4.039	2.127	.099
Grade	12.118	3	4.039	2.127	.099
Explained	12.118	3	4.039	2.127	.099
Residual	336.213	177	1.900		
Total	348.331	180	1.935		

(response 5, p = .2344). Response 4 (p = .4683) indicated timbre was second in importance to students' decisions to learn an instrument. Parents were deemed a neutral influence in the decision to learn an instrument (p = .9274). Liking the teacher was not a strong influence to begin an instrument (response 3, p = .1578). Friends had the least amount of influence over the decision to play a stringed instrument (response 2, p = .5680).

Two responses to Statement 21 were found to have significant differences. Response 3 had the highest level of significance (p = .0491). Females enjoyed the music they played significantly more than males. To females, the music is the second most important reason for continuing in orchestra. Males indicated the second most important reason for continuing in orchestra was their confidence in their ability to play their instrument. Male self-concept was significantly higher than female self-concept (response 1, p = .0497). Response 5, while insignificant, (p = .0775) indicated students were intrinsically motivated to continue playing their instrument. Both genders agreed that they

liked to play their instrument and it was the most important reason for continued participation. Both genders agreed strongly that being part of the group was not a strong influence on their decision to continue in orchestra (response 4, p = .7521). Liking the teacher was demonstrated by both genders to be an unimportant factor to their continued participation (response 2, p = .1659). Females did indicate this response was less important than males.

No significant differences were found in responses to statement 22. Both males and females indicated their parents to be the most important influence on the continued participation (response 5, p = .5655) The orchestra director was found to be the second most important influence for continued participation for both genders (response 3, p = .2716). Friends (response 1, p = .4854) and an easy grade (response 2, p = .3569) were the next important influences. Males considered both responses to be equally influential, while females considered friends to be a stronger influence than an easy grade. Both genders considered the parents' purchase of the instrument to be the least important influence on their continued participation in orchestra (response 4, p = .2993).

Statement 23 indicated only one response with significant differences. Both genders indicated they liked learning the music, however females enjoy learning the music significantly more than males (response 2, p = .0178). It was considered the second most enjoyable thing about orchestra by both genders. Both genders strongly agreed that performing was their favorite thing about orchestra (response 1, p = .9716). Being a member of the group was unimportant for both genders (response 5, p = .4604) as was being with friends (response 4, p = .1083). However, responses 4 and 5 were indicated to be more important to males than females. The music chosen by the teacher is enjoyed least by both genders (response 3, p = .8313)

Table X shows results of the Mann-Whitney U analysis by grade for questions 20 through 23. The responses of each grade levels grouped into upper- (eleventh- and

Table IX

Mann-Whitney U by Gender for Statements 20-23

	U	W	Corrected for ties Z	2-Tailed P
20. The reason I decided to play a stringent instrument was				
1. my parents encouraged me to.	2565.0	3245.0	-.0911	.9274
2. my friends were going to play an instrument.	2442.5	3072.5	-.5710	.5680
3. I liked the teacher.	2207.0	3603.0	-1.4125	.1578
4. I liked the sound of the instrument.	2393.5	3416.5	-.7253	.4683
5. I thought I would be good at it.	2275.5	2905.5	-1.1892	.2344
21. I have continued to participate in orchestra because				
1. I play my instrument well.	2050.0	2680.0	-1.9625	.0497
2. I like the teacher.	2223.0	2853.0	-1.856	.1659
3. I enjoy the music we play.	2050.5	3759.5	-1.9678	.0491
4. I like being part of the group.	2503.0	3133.0	-.3159	.7521
5. I like playing my instrument.	2152.5	3657.5	-1.7653	.0775
22. The most important influence on me in continuing my participation in orchestra is				
1. my friends.	2382.0	3393.0	-.6977	.4854
2. it's easy to get a good grade.	2336.0	3474	-.9212	.3569
3. the orchestra director.	2287.0	2917.0	-1.0994	.2716
4. my parents bought the instrument.	2307.5	2937.5	-1.0378	.2993
5. my parents.	2434.5	3375.5	-.5746	.5655
23. The thing I like most about orchestra is				
1. performing.	2563.0	3212.0	-.0357	.9716
2. learning the music.	1944.0	3866.0	-2.3706	.0178
3. the music the teacher chooses.	2532.0	3278.0	-.2130	.8313
4. being with my friends.	2084.0	2679.5	-1.6057	.1083
5. being a member of a group.	2247.0	2808.0	-.7382	.4604

twelfth-graders) and lower-classmen (ninth- and tenth-graders) were compared to each other. The differences in the responses are significant when $p < .05$. Again, few significant differences were found between grade levels.

Statement 20 had two significant responses. Response 4 differences were the most significant ($p = .0003$). Timbre preference was indicated to be significantly more important to older students. Upper-classmen considered the timbre of the instrument to be the most important reason for beginning instrumental instruction while lower-classmen considered timbre the second in order of importance for beginning instruction. Friends were last in order of importance for both grade levels however, lower-classmen considered friends to be a significantly more important influence on their decision to begin a stringed instrument than upper-classmen (response 2, $p = .0093$). The rest of the responses to statement 20 were found to have insignificant differences. Response 4 ($p = .4181$) was considered the most important reason to begin a stringed instrument for lower-classmen who demonstrated more initial confidence in their ability to learn an instrument than upper-classmen. Parental encouragement was also more important for lower-classmen than upper-classmen (response 1, $p = .1650$). Liking the teacher was least important for both grade levels (response 3, $p = .4620$).

Responses to statement 21, had only one significant difference. Both grade levels indicated they enjoyed playing their instrument and it was the most important reason for continuing participation in orchestra. However, lower-classmen enjoyed orchestra significantly less than upper-classmen ($p = .0573$). Differences in the rest of the responses to this statement were minimal. Both grade levels considered response 1 the second most important reason for continued participation and agreed they played their instrument well ($p = .7057$). Subjects agreed the next important reason for continued participation was enjoyment of the music (response 3, $p = .7126$). Being part of the group was next in order of importance for both grade levels in their decisions to continue participation

(response 4, p = .9440). It was agreed by both grade levels that liking the teacher was least important to their decision to continue participation (response 2, p = .8675).

Statement 22 showed significant differences to only one response. Friends were shown to be significantly more important to upper-classmen than to lower-classmen (response 1, p = .0047). Lower-classmen considered friends an unimportant influence in their decision to continue in orchestra while upper-classmen indicated friends were a neutral influence. The rest of the responses to statement 22 were found to have non-significant differences. Both grade levels agreed parents were the most important influence for continuing in orchestra (response 5, p = .2703). The orchestra director was the second most important influence for both grade levels for continued participation (response 3, p = .5921). Response 2, (p = .5476) was considered neutral for both grade levels as an influence to continued participation. Parents having purchased the instrument was least important as an influence for continued participation for both grade levels (response 4, p = .1990).

Statement 23 showed no significant difference for any response. Performing (response 1, p = .1633) was rated the most enjoyable by lower-classmen, while learning the music (response 2, p = .5107) was slightly less enjoyable. Upper-classmen considered performing and learning the music equally enjoyable. Both grade levels strongly agreed that being a part of the group was considered neutral as a factor in enjoying orchestra (response 5, p = .7994). Students indicated being with friends was less enjoyable than being part of the group for both grade levels (response 4, p = .2873). The music chosen by the orchestra director was considered the least enjoyable thing about orchestra (response 3, p = .0355).

Table XI shows the results of the Kruskal-Wallis One-Way ANOVA by grade level. The responses of each grade level (9 through 12) were compared to each other.

Table X

Mann-Whitney U by Grade for Statements 20-23

	U	W	Corrected for ties Z	2-Tailed P
20. The reason I decided to play a stringed instrument was				
1. my parents encouraged me to.	3205.0	5881.0	-1.3884	.1650
2. my friends were going to play an instrument.	2860.0	6226.0	-2.5992	.0093
3. I liked the teacher.	3421.0	5191.0	-.7355	.4620
4. I liked the sound of the instrument.	2504.0	4274.0	-3.5843	.0003
5. I thought I would be good at it.	3403.5.	5682.5	-.8097	.4181
21. I have continued to participate in orchestra because				
1. I play my instrument well.	3534.5	5551.5	-.3777	.7057
2. I like the teacher.	3605.5	5375.5	-.1668	.8675
3. I enjoy the music we play.	3538.0	5548.0	-.3683	.7126
4. I like being part of the group.	3635.0	5451.0	-.0703	.9440
5. I like playing my instrument.	3098.0	4868.0	-1.9013	.0573
22. The most important influence on me in continuing my participation in orchestra is				
1. my friends.	2712.5	4482.5	-2.8249	.0047
2. it's easy to get a good grade.	3458.0	5628.0	-.6104	.5416
3. the orchestra director.	3482.0	5252.5	-.5358	.5921
4. my parents bought the instrument.	3242.5	5843.5	-1.2844	.1990
5. my parents.	3303.5	5782.5	-1.1023	.2703
23. The thing I like most about orchestra is				
1. performing.	3187.5	4957.5	-1.3940	.1633
2. learning the music.	3445.0	5215.0	-.6577	.5107
3. the music the teacher chooses.	3326.5	5759.5	-1.0246	.3055
4. being with my friends.	3282.5	5744.5	-1.0721	.2837
5. being a member of a group.	3517.5	5450.5	-.2542	.7994

The differences in the responses were significant when $p < .05$. Differences in subjects' responses were mostly insignificant.

Of the five response to statement 20, two had significant differences. Response 4 ($p = .0021$) indicated timbre to be the most important influence for beginning an instrument for eleventh- and twelfth-grade subjects. Ninth and tenth-grade subjects indicated timbre to be second in order of importance. The largest difference in scores was found between tenth- and twelfth-grade subjects. Response 2, was also found to have significant differences ($p = .0054$). Friends were found to be least influential for students in each grade level. However, friends were found to be significantly more important to tenth-grade subjects than to the rest of the grade levels. No other responses to statement 20 were not found to have significant differences. Response 5 ($p = .8834$) indicated tenth-graders reported the most confidence in their ability to learn an instrument. Both ninth- and tenth-grade subjects felt their potential ability on an instrument was the most important influence on their decision to begin playing. Parental encouragement (response 1, $p = .2310$) and liking the teacher (response 3, $p = .8907$) were the least influential factors for all grade levels .

No significant differences were found with any responses to statement 21. Response 5, I play my instrument well, ($p = .1793$) was most important to all grade levels. Subjects were intrinsically motivated to continue playing their instrument. Enjoying the music also indicates intrinsic motivation for continuing the instrument for all subjects (response 3, $p = .9329$). All grades agreed confidence in their playing ability was an influence to continued participation (response 1, $p = .6925$). Being part of the group was less important than the previous responses, yet is still important to all grade levels (response 4, $p = .9654$). All students strongly agreed that liking the teacher was least important influence to continuing participation (response 2, $p = .9877$).

Statement 22 indicated only one significant response. Friends were significantly more important to eleventh-grade subjects than ninth-grade subjects (response 1, p = .0061). Friends were considered a "Neutral" influence for ninth-, tenth- and twelfth-grade subjects to continued participation. Eleventh-grade subjects considered friends an "Important" influence to continued participation. The other responses to this statement were found to be non-significant. All grades agreed parents were an "Important" influence to continued participation (response 5, p = .1701) however, parents were more important as an influence for continued participation for ninth-grade subjects. All grade levels strongly agreed the orchestra director was an "Important" influence to continued participation (response 3, p = .8904). An easy grade was considered a "Neutral" influence to continued participation (response 2, p = .7307). Parents purchasing an instrument was also considered a "Neutral" influence for continued participation (response 4, p = .4411). While responses to statements 2 and 4 were not important influences for continued participation in orchestra, it is evident that extrinsic motivators do influence some students to continue in orchestra.

No significant differences were found in the responses to statement 23. Responses 3 the music the teacher chooses (p = .3565), 4 being with my friends (p = .2806) and 5 being a member of the group (p = .6324) were considered "Neutral" in enjoyment by all grade levels. Performing (response 1, p = .5649) and learning the music (response 2, p = .8196) were indicated to be the most enjoyable aspects to being in orchestra. Responses to this statement indicated that while extrinsic motivators do influence continued participation, they are not as important as intrinsic motivators.

Table XI

Kruskal-Wallis 1-Way ANOVA by Grade for Statements 20-23

				Corrected for ties	
	Chi-Cases	Chi-Square	Sig.	Square	Sig.
20. The reason I decided to play a stringed instrument was					
1. my parents encouraged me to.	183	4.0788	.2531	4.2979	.2310
2. my friends were going to play an instrument.	183	10.6553	.0137	12.6812	.0054
3. I liked the teacher.	183	.5784	.9014	.6249	.8907
4. I liked the sound of the instrument.	183	13.5844	.0035	14.7007	.0021
5. I thought I would be good at it.	183	.5783	.9014	.6566	.8834
21. I have continued to participate in orchestra because					
1. I play my instrument well.	183	1.3878	.7084	1.4559	.6925
2. I like the teacher.	183	.1171	.9897	.1325	.9877
3. I enjoy the music we play.	183	.4119	.9378	.4352	.9329
4. I like being part of the group.	183	.2588	.9676	.2710	.9654
5. I like playing my instrument.	183	3.7887	.2852	4.8993	.1793
22. The most important influence on me in continuing my participation in orchestra is					
1. my friends.	182	11.7901	.0081	12.4093	.0061
2. it's easy to get a good grade.	183	1.2381	.7436	1.2936	.7307
3. the orchestra director.	183	.5991	.8966	.6264	.8904
4. my parents bought the instrument.	183	2.5138	.4728	2.6948	.4411
5. my parents.	183	4.6309	.2009	5.0228	.1701
23. The thing I like most about orchestra is					
1. performing.	182	1.8415	.6060	2.0362	.5649
2. learning the music.	183	.8640	.8341	.9242	.8196
3. the music the teacher chooses.	183	2.9616	.3976	3.1738	.3656
4. being with my friends.	182	3.6031	.3076	3.8286	.2806
5. being a member of a group.	181	1.6203	.6548	1.7203	.6324

Chapter V

Conclusion

Understanding the reasons behind a student's decision to participate in orchestra is essential to the continuation in string classes. To recruit and retain music students, educators must identify and understand the influences on a student's decision to participate. It is also vital to understand how those influences may affect different ages and genders. This study investigated the motivational factors of students who continue to participate in orchestra classes. Motivational factors were compared by grade level and gender to determine differences. Psychological factors such as self-concept, timbre and perceived difficulty of an instrument were also investigated and compared by gender and grade. Finally, sociological factors such as parents, peers, music teachers and gender biases of musical instruments were investigated. The study also compared sociological factors by grade and gender.

Previous research suggested music achievement is based on motivation. Instrumental music teachers with strong motivational skills can increase students' achievement, therefore having a greater affect on students continuing in orchestra (Asmus, 1994, 1986, 1985). While intrinsic motivators were found to be more important than extrinsic motivators, for maximum benefits, educators should try to balance extrinsic motivational techniques with intrinsic motivational techniques (Asmus, 1994; Deci, 1990; and Walker, 1981). Younger students felt if they worked hard, they could be successful, while older students tended to feel successful only if they possessed innate music ability (Asmus, 1986). As with motivational factors, previous research suggested psychological factors are also affected by achievement. When students feel successful in orchestra, their self-concept is enhanced, therefore, they are more likely to continue participating in orchestra (Hurley, 1995; Asmus, 1994; Papinchak, 1992; Austin, 1990). Sociological factors of parents, teachers, peers, and gender biases were also explored in previous

research. Parental involvement and support is important to the continued participation of students in orchestra (Allen, 1995; Hurley, 1995; Fortney, Boyle and DeCarbo, 1993; Trollinger, 1993; Zdzinski, 1992; Delano & Royse, 1987; Mountford 1978; Martignetti, 1965). Researchers also found, stringed instruments, except bass, are considered feminine or neutral (Abeles & Porter, 1978; Brandenberg, 1991; Delzell & Leppla, 1992; Fortney, Boyle & DeCarbo, 1993; Griswold & Chroback, 1981; Kelly, 1995; Tarnowski, 1993; Zervoudakes & Tanur, 1994). Since, it was suggested that males confine themselves more often to masculine instruments, recruiting and retaining male students may be more difficult than recruiting and retaining female students (Abeles & Porter, 1978; Delzell & Leppla, 1992).

The present study found considerably more females than males in high school orchestras. This reflects previous research on gender participation (Abeles & Porter, 1978). Of the 183 subjects in this study, female students outnumbered male students by slightly more than four to one. This supports the findings that retaining male students could be more difficult than retaining female students (Abeles & Porter, 1978; Delzell & Leppla, 1992).

Another interesting finding is that enrollment decreased as the grade level increased. Ninth- and tenth-grade students accounted for 68% of the study's population while eleventh- and twelfth-graders accounted for only 32%. The largest decline in participants was evident between tenth- and eleventh-graders. This was true for both males and females. Based on the data, the decline in enrollment for older students could be because older students demonstrated more intrinsic motivation, like the sound of their instrument more than younger students, liked playing their instrument more than younger students, and demonstrated fewer gender biases. Younger students who do not possess the intrinsic motivation, do not like the sound of the instrument, do not like playing their

instrument or demonstrate gender biases and may be less likely to continue their participation in orchestra.

The data yielded some clear differences in gender biases for males and females, and different ages. Males indicated stronger gender biases toward orchestra. Males indicated that participation in orchestra was associated with the female gender. This may account for the lack of male participation in orchestra. However, neither males nor females indicated strong feelings that orchestra was more for either gender. This conclusion may be possible because students with strong gender biases are no longer participating in orchestra at the high school level. Ninth- and tenth-grade students also indicated more gender biases than eleventh- and twelfth-grade students. Gender biases may be more present in the lower grades because older students with strong gender biases may have already dropped out of orchestra.

This study found that both males and females felt their teacher thought they were successful. However, males felt significantly stronger than females. Males also reported that they felt more encouraged by their teacher to continue participation in orchestra than females. Males, while the findings were not significant, also indicated that their peers and parents influenced them more strongly than females. This could be because male students need more outside support to express themselves musically as reported by Trollinger (1993).

The data indicated that significantly more males than females believed they play their instrument well. This contrasts Austin's (1990) findings that females possessed significantly higher levels of music self-concept than male students. However, since the males in the present study have participated in orchestra music for several years, and have had more support from teachers, peers and parents, these male students may have developed a higher self-concept. Perhaps male students who were lacking in self-concept are no longer participating in orchestra.

Another interesting gender difference concerned what students like most about orchestra classes. This study indicated that males liked learning the music significantly less than females. However, both males and females indicated they do like learning the music. It is interesting that both males and females enjoyed performing more than learning the music. Again, males preferred to perform much more than to learn the music. Male students may enjoy the recognition of their playing ability that an applauding audience provides. It could also be that, as reported in the present study, females enjoy the music being played significantly more than the males.

The data reflected trends in students' reasons for deciding to play an orchestral instrument. The most important reason in the decision to play a stringed instrument, cited by all grade levels and both genders, was that students indicated they would be good at playing a stringed instrument. The second reason cited for starting an instrument was that students liked the sound of the instrument. A significant difference emerged between older and younger students. Youngers students, especially tenth-graders, did not like the sound of their instrument as well as older students. This could indicate that students who did not initially like the sound of the instrument did not, or will not continue their participation. The only other significant finding is the influence of friends on student decisions about starting an instrument. This study found that friends were the least important factor in deciding to begin instruction. However, friends were significantly more important for younger students, especially tenth-graders. This contradicts finding by Hurley (1995) who reported that students who knew someone who played an instrument predisposed them to also want to play an instrument.

This study found that parental influence was stronger for younger students which supports finding by Zdzinski (1992). Younger subjects indicated that parental influence was somewhat important to their continued participation. Older students indicated parental influence was not important. Peer influence however, was reported to be more

important for older students. Eleventh-grade students in particular reported parents to be least influential of all grades surveyed, while indicating peer influence to be more important than any other grade level for continued participation in orchestra. However, all grades agreed their parents attended their concerts on a regular basis which could indicate that students do not realize their parents are influencing their decision to continue in orchestra which supports Hurley's findings (1995). The support that parents may provide throughout their career in orchestra by their continued concert attendance, could be taken for granted. It is also interesting that older students reported a slight decline in concert attendance by their parents. This could account for the reported decrease in importance of parental influence on older students. The decline in parental concert attendance may be influenced by students reaching the age in the eleventh-grade to acquire a driver's licence, and therefore are less dependant on parents for transportation.

The data reflected trends in the reasons students gave for practicing. Students indicated that they were not motivated to practice by their parents. Practicing as a class requirement was only slightly important as a motivator. The most important practice motivator was students enjoyed practicing. Students who enjoy practicing continued to participate at this age. This supports motivation research by Asmus (1994), Walker (1981) and Deci (1980) which indicated intrinsic motivation was more important than extrinsic motivation. It is interesting that ninth-graders indicated they enjoyed practicing least and the enjoyment of practiced increased as the age of the student increased. Older students reported they continue to participate because they like playing their instrument, which ties with them also enjoying practicing. Younger students liked playing their instruments significantly less. Older students have possibly continued to participate because they have developed more intrinsic motivation. Possibly, students who have not experienced enjoyment from practicing or playing their instrument have already discontinued their participation in orchestra. It is also possible that the ninth- and tenth-

grade students who indicated they did not enjoy practicing or playing their instrument will not continue their participation. Older students might also have increased ability which makes playing and practicing an instrument more enjoyable.

It is important to mention that this study found that students who continue to participate in orchestra have more similar qualities than different qualities. In general, students continue to participate in orchestra because they enjoy orchestra. They felt successful in orchestra, they felt it was a worthwhile activity and they felt supported and encouraged by parents and teachers to continue.

This study's findings may have future implications for orchestra directors in the areas of recruiting and retaining orchestra students. Based on the data, students who continue to participate in orchestra through high school are intrinsically motivated. Therefore, solely using extrinsic motivators, such as grades and chair placements may be detrimental to retaining students. Teachers should consider grading students on effort or improvement in addition to ability. Room arrangement may place more advanced students next to students who lack skills. This may give students a good model to emulate and help less experienced players become more confident. Timbre preference is also important. Teachers could encourage students who do not like the sound of their instrument to try a different stringed instrument in an attempt to retain a student, or provide examples of good tone production. One way to demonstrate good tone production would be to have students listen to professional groups either in person, or audio and video recordings.

This study indicated the tremendous importance of teacher encouragement. Praise of students accomplishments, no matter how small, appears extremely important to students. Parental involvement is also very important to continued participation. Creating an orchestra booster group, like many bands have, could be a way to get parents more involved. This study's results also suggested that because students enjoy performing and

learning the music, but do not enjoy the music chosen by the instructor, teachers need to make an effort to involve students in the decision making process when they choose music. Helping students understand why pieces are or are not appropriate and allowing students to have some input into what music they play could give them a sense of ownership of the group. Also, since students indicated performing was important, scheduling more performances may make orchestra more worthwhile.

Additional research is still warranted. Extending the scope of the study by having a larger pool of subjects, as well as including elementary and middle school students could elicit more contradictory results. Isolating the importance of rehearsal techniques as a retention factor is also needed. Further research into the specific recruiting techniques teachers use could be helpful. Also the specific techniques teachers use to encourage students to continue their orchestral participation, including the amount of contact teachers have with parents, could be researched. Since this study found a lack of male participation in orchestra, it should be researched whether fewer male students begin instruction in strings classes, or if they drop out of orchestra at a faster rate.

This topic is very important to the continuation of orchestra programs at all grade levels. High school performing groups are usually more visible to the public, and usually participate in more competitions. Without student interest in high school orchestra, orchestral programs could cease to exist at all grade levels. The more information that can be gathered and put into practice on how to recruit and retain students, the larger and more proficient the orchestra programs will become.

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Appendix A

Survey for High School Orchestra Students

Section I--Directions: Circle the most appropriate response to each question.

1. **What is your grade level?**

   9th 10th 11th 12th

2. **What is your gender?**

   Male Female

Section II--Directions: Circle the number which best represents your level of agreement with each statement.

3. **I practice my instrument because it is a class requirement.**

   Agree 1 2 3 4 5 6 Disagree

4. **I decided to play an instrument because my friends were going to play an instrument.**

   Agree 1 2 3 4 5 6 Disagree

5. **My orchestra teacher encourages me to continue in orchestra.**

   Agree 1 2 3 4 5 6 Disagree

6. **I participate in orchestra because my parents want me to.**

   Agree 1 2 3 4 5 6 Disagree

7. **I enjoy practicing my instrument.**

   Agree 1 2 3 4 5 6 Disagree

8. I thought it would be hard to learn how to play a stringed instrument.

Agree 1 2 3 4 5 6 Disagree

9. I decided to participate in orchestra because the teacher made it seem easy.

Agree 1 2 3 4 5 6 Disagree

10. My parents make me practice.

Agree 1 2 3 4 5 6 Disagree

11. I like the sound of my instrument.

Agree 1 2 3 4 5 6 Disagree

12. I plan to continue playing my instrument after high school.

Agree 1 2 3 4 5 6 Disagree

13. I feel orchestra is more for girls than boys.

Agree 1 2 3 4 5 6 Disagree

14. I feel orchestra is more for boys than girls.

Agree 1 2 3 4 5 6 Disagree

15. I continue to play in orchestra because my friends are in orchestra.

Agree 1 2 3 4 5 6 Disagree

16. I feel successful in orchestra.

Agree 1 2 3 4 5 6 Disagree

17. My parents attend my orchestra concerts.

Agree 1 2 3 4 5 6 Disagree

18. My orchestra director thinks I am successful in orchestra.

Agree 1 2 3 4 5 6 Disagree

19. My orchestra director is knowledgeable about stringed instruments.

Agree 1 2 3 4 5 6 Disagree

Section III--Directions: Rank the responses to the following statements in order of importance with 1 being most important and 5 being least important.

20. The reason I decided to play a stringed instrument was

_____ my parents encouraged me too.

_____ my friends were going to play an instrument.

_____ I liked the teacher.

_____ I liked the sound of the instrument.

_____ I thought I would be good at it.

21. I have continued to participate in orchestra because

_____ I play my instrument well.

_____ I like the teacher.

_____ I enjoy the music we play.

_____ I like being part of a group.

_____ I like playing my instrument.

22. The most important influence on me in continuing my participation in orchestra is

_____ my friends.

_____ its easy to get a good grade.

_____ the orchestra director.

_____ my parents bought the instrument.

_____ my parents.

23. The thing I most like about being in orchestra is

_____ performing.

_____ learning the music.

_____ the music the teacher chooses.

_____ being with my friends.

_____ being a member of the group.

Appendix B

Letter of Application

October 22, 1996

John Jorgensen, Research Department-Omaha Public Schools,

I am writing to ask your permission to distribute a survey to the high school orchestra students in OPS in order to fulfill a graduate degree requirement at the University of Nebraska at Omaha. My name is Peggy Garcia Boettger and have been a travel instrumental music teacher for OPS for seven years. My current assignment includes Bryan High School, Bryan Middle School, and Chandler View Elementary.

The twenty-three question survey will only require fifteen minutes of instruction time to distribute, complete and collect. The orchestra directors' participation is optional. A proposal including the survey and correspondence is submitted for your examination. If you have any questions or concerns please contact me at Bryan High School, 557-3100. Thank you for your time.

Sincerely,

Peggy Garcia Boettger

Appendix C

Introductory letter to participating directors

November 6, 1996

Dear Colleague,

I am writing to ask for your assistance in completing a short survey with your orchestra students. With your help I am investigating the reasons males and females give for participating in orchestra. This investigation is being conducted to fulfill a graduate degree requirement at the University of Nebraska at Omaha.

The survey should only take ten to fifteen minutes to distribute, complete, and collect. This investigation is confidential. The survey will not identify students, schools or directors. I hope you will offer this survey to all orchestra students at your convenience before December 20, 1996.

The results will be made available to you before the end of the second semester. If you have any questions or comments concerning the investigation feel free to contact me at Bryan High School, 557-3100. Thank you for your time.

Sincerely,

Peggy Garcia Boettger

Appendix D

Letter to building principals

November 5, 1996

Dear Principal,

My name is Peggy Garcia Boettger and I have taught instrumental music for OPS for seven years. I am writing to ask your permission to distribute a survey to the orchestra students in your school.

This investigation will examine the reasons students continue to participate in orchestra. The study has been approved by the Research Department of the Omaha Public Schools. All information is confidential. The survey does not identify students, schools, or instructors.

The 23 question survey will require only fifteen minutes of instruction time to distribute, complete, and collect. Your instrumental music teachers' participation is optional. If you have any questions please contact me at Bryan High School, 557-3100.

If you would like the results of the survey please complete the attachment and return to Peggy Boettger at Bryan High School via the school mail system. Thank you for your time.

Sincerely,

Peggy Garcia Boettger

Please send the results of this study to:

NAME:

SCHOOL:

Appendix E

Participating orchestra directors

Name	School
Bluford, Michelle	Benson High School
Boettger, Peggy	Bryan High School
Kearney, Bill	North High School
Perry, Wendy	North High School
Lovgren, Bill	Northwest High School
Mickey, Murl	Burke High School
Miller, Mark	South High School
Moriarty, Molly	Central High School

Appendix F

Cover letter for participating directors

November 12, 1996

Dear Colleague,

Thank you for your assistance in completing this survey. The survey has been approved by the Research Department of the Omaha Public Schools and your building principal. The results of the survey are confidential and no student, school or teacher is identified. Your participation is optional, however the larger the sample, the more valid the results will be.

One survey per student is enclosed and a letter of procedure to read to the participants. Please administer the survey at your convenience before December 20, 1996. If you would like the results of the study please complete the attachment and return to me with the completed surveys. All surveys (complete and incomplete) need to be returned to Peggy Boettger, Bryan High School via the school mail. If you have any questions feel free to contact me at Bryan High School, 557-3100.

Thanks Again,

Peggy Garcia Boettger

Please send the results of this study to:

NAME:

SCHOOL:

Appendix G

Procedures for implementation

November 12, 1996

Dear Colleague,

Please read the following instructions to participating students prior to distributing the survey.

To all participating students,

Thank you for taking the time to complete this survey. You will be asked to agree or disagree with a statement and to rank items in order of importance. There are no right or wrong answers, and this will not affect your grade in orchestra. Simply mark the response that most clearly represents your feeling or opinion.

This survey is being conducted by a graduate student from the Music Department of the University of Nebraska at Omaha. It does not necessarily reflect the opinions of the Omaha Public Schools or you orchestra director. All information is confidential. Do not write your name, your director's name, or your school name on the survey.

Thank you for your cooperation,

The Researcher

Appendix H

Follow-up reminder

November 27, 1996

Dear Colleague,

Thank you again for your assistance in completing this survey of orchestra students. I would like to remind you that all surveys should be returned by December 20, 1996. If you are unable to distribute the survey, or if you have any questions, please contact me at Bryan High School, 557-3100.

Thanks Again,

Peggy Garcia Boettger

Appendix I

Panel of Experts

Mr. David Klein--President of the Nebraska Chapter of the American String Teachers Association, Orchestra Director of Kearney High School.

Dr. James Saker--Music Department Head at the University of Nebraska Omaha.

Mrs. Patricia Ritchie--Orchestra Director Millard West High School

Mr. William Ritchie--Past President of the Nebraska Chapter of the American String Teachers Association.

Dr. Karen White--Dean of the College of Fine Arts at the University of Nebraska at Omaha.